# Guideline on Establishment of Test Item in Preparation of Standards and Analytical Methods of Quasi-Drugs

August 2016

MINISTRY OF FOOD AND DRUG SAFETY
National Institute
of Food and Drug Safety Evaluation

This guideline is intended to provide criteria, significance of test items, etc. in preparation of test items for quality control of quasi-drugs. Since the guideline is based on up-to-date experience and scientific evidence, it is subject to be revised according to new scientific evidence. The Ministry of Food and Drug Safety therefore welcomes opinions regarding new scientific discoveries. The requirements of this guideline do not have legal force, and they may be interpreted in different ways depending on individual cases.

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# Table of Contents

# I. Introduction

As described in Article 2 Subparagraph 7 of the Pharmaceutical Affairs Act, quasi-drugs are defined as materials designated by the Minister of Food and Drug Safety, including fibers, rubber products or similar products used for the purpose of treating, alleviating, or preventing human or animal diseases, non-appliance, non-machinery or similar articles which act slightly upon or do not directly act upon human bodies, and formulations used for sterilization, insecticide and uses similar thereto for the purpose of preventing infectious disease. Based on the above definitions, the Designation of Range of Quasi-drugs designates types and ranges of quasi-drugs in detail. According to this notification, a broad range of products belong to quasi-drugs, including paper products such as gauze and stretch bandages, toothpastes, anti-hair loss products, anti-infective insecticides, etc. Since foreign countries such as the U.S., Europe, Japan, etc. classify cosmetics, medical devices, industrial products, etc. into a variety of categories, applicants who attempt to develop or import the products have a lot of difficulties setting specifications for product quality control.

This guideline therefore provides the industry concerned and examiners with establishment standards and significances of each test in setting up the test items for quality control of quasi-drugs. Hence, this guideline is expected to promote the development of high quality quasi-drugs and contribute to consumer protection by quality improvement.

# II. Test Items and Significance

According to Article 2 Subparagraph 7 of the Pharmaceutical Affairs Act and Designation of Range of Quasi-drugs (MFDS Notification No. 2015-56, August 26,2015), quasi-drugs include the following classifications, and the test items for quality control by each product group are set as follows. However, purity test may be set to secure safety depending on the characteristics of products, and necessary manufacturing pharmaceutical test items can also be additionally set in order to regulate features or functions of formulations.

| I | Fiber, rubber or paper products provided for hygiene purposes as quasi-drugs in accordance with Article 2 Subparagraph 7 Item A of the Pharmaceutical Affairs Act |
|---|---|

## 1. Sanitary pads for menstrual hygiene management

**Description:** A test designed to identify color, shape, etc. of products through visual examination

**Purity: 1) Pigments** - A test designed to identify the presence or absence of pigment elution in the indicator to distinguish unusable side of a sanitary pad

**2) Acid and alkali** - A test to detect elution of the substance when acidic or alkaline materials are used during manufacturing process

**3) Fluorescent whitening agent** - A test designed to evaluate whether fluorescent whitening agent is used and identify significant contamination incurred by hair oil, etc. or manufacturing defects using the fluorescence detection

**4) Formaldehyde** - A test performed because formaldehyde is contained in surface (coating) materials, etc.

**Mass:** A test designed to see if the weight of product exceeds the threshold value in the indicated range.

**Absorption capacity:** A test to secure the lowest limit of the performance because sanitary pads should be capable of absorption and maintenance of menstrual blood according to the intended use

**Exudation:** A test designed to identify the minimum limit of the performance of waterproof effect

**Strength:** A test designed to obtain the minimum strength required for sanitary pads

## 2. Tampons for menstrual hygiene management

**Description:** A test designed to identify color, shape, etc. of products through visual examination

**Purity: 1) Foreign matters** - A test designed to identify whether tampons contain any foreign matters that can damage vaginal mucous membranes. Observe foreign matters including metal or glass debris in the manufacturing process or the matters considered to be attached due to improper care or poor environmental conditions.

**2) Pigments** - A test designed to identify the elution of dyes used in tampons

**3) Acid and alkali** - A test to detect elution of the substance when acidic or alkaline materials are used during manufacturing process

**4) Fluorescent whitening agent** - A test designed to evaluate whether fluorescent whitening agent is used and identify significant contamination incurred by hair oil, etc. or manufacturing defects using the fluorescence detection

**Absorption speed:** A test designed to obtain the minimum limit of absorption speed of menstrual tampons

**Absorption capacity:** A test intended to set the threshold value of absorption capacity by each expressed type because tampons should be able to absorb and maintain a sufficient menstrual blood, but if tampons with stronger absorption capacity than user's amount of menstrual blood, users may experience vaginal dryness

**Detachable materials:** A test designed to measure detachable materials in absorbent so that fibrous chunk should not be detached or isolated during the use or when removing a tampon

**Strength:** A test designed to secure the minimum strength of the hand strap for removal, so that the strap should not be cut or detached from the absorbent when removing a tampon from vagina

**Ethylene oxide (EO) gas residual:** A test intended to set a threshold value for EO and ethylene hydrin residue, which may remain in the products when these gases are used in the manufacturing process

## 3. Surgical masks

**Appearance:** A test designed to identify color, shape, etc. of products through visual examination

**Description:** A test to measure the sizes of each component

**Purity: 1) Pigments** - A test designed to identify the presence or absence of pigment elution, etc.

**2) Acid and alkali** - A test to detect elution of the substance when acidic or alkaline materials are used during manufacturing process

**3) Fluorescent whitening agent** - A test designed to evaluate whether fluorescent whitening agent is used and identify significant contamination incurred by hair oil, etc. or manufacturing defects using the fluorescence detection

**4) Formaldehyde** - A test performed because formaldehyde is contained in surface (coating) materials, etc.

**Strength:** A test designed to obtain the minimum strength required for surgical masks

**Liquid resistance:** A test designed to measure resistance to liquid by measuring the time required for water to permeate into masks

## 4. Health masks

**Appearance:** A test designed to identify color, shape, etc. of products through visual examination

**Description:** A test to measure the sizes of each component

**Purity test: 1) Pigments** - A test designed to identify the presence or absence of pigment elution, etc.

**2) Acid and alkali** - A test to detect elution of the substance when acidic or alkaline materials are used during manufacturing process

**3) Fluorescent whitening agent** - A test designed to evaluate whether fluorescent whitening agent is used and identify significant contamination incurred by hair oil, etc. or manufacturing defects using the fluorescence

detection

4) **Formaldehyde** - A test performed because formaldehyde is contained in surface (coating) materials, etc.

**Tensile strength in connecting part of fixing hairband:** A test designed to ensure the minimum tensile strength needed for the main body of the mask and the connecting area in the fixing hairband to get a complete seal of the mask to the face.

**Facial inspiratory resistance:** A test to measure the resistance of internal mask when air is inhaled

**Dust collection efficiency:** A test to measure the rate of capabilities of masks to filter fine particles when air is inhaled

## 5. Eye Patches

**Description:** A test to measure the sizes of each component

**Purity: 1) Pigments** - A test designed to identify the presence or absence of pigment elution, etc.

2) **Formaldehyde** - A test performed because formaldehyde is contained in surface (coating) materials, etc.

**Phenol:** A test intended to determine the detection of phenol which has residual risk in synthetic resin

**Viable cell count**: A test to measure mesophilic bacteria and fungus which can grow in aerobic condition with qualitative and quantitative tests of microbes with growth ability existing in the product

## 6. Stretch bandages Same as '10. Gauze'

## 7. Elastic stretch bandages

**Appearance, Description (length and width) and mass**

**Appearance:** A test to set the threshold for the linear density of single yarn.

**Elasticity:** A test intended to ensure the maximum elasticity to maintain elasticity of the product

**Tensile strength:** A test intended to ensure the minimum tensile strength needed for elastic stretch bandage

## 8. Plaster bandages

**Appearance and Description (length, width and mass)**

**Water permeability:** A test designed to observe the permeability of water on plaster bandages when soaked in the water and then water is removed

**Consolidation test:** A test to see if plaster bandages are well clotted and hardened after operating the same process as water permeability test

**Identification:** A test to verify the properties of plaster bandages such as effective ingredients, etc.

**Content:** A test to measure the content of effective ingredients contained in the product by physical, chemical or biological testing methods.

## 9. Tubular compression bandages (Stockinette)

**Appearance and Description (length, width and mass)**

**Appearance: 1) Number of patterns** - A test to measure the number of patterns within 2.5 cm of stockinette using a magnifying glass

**2) Number of waves** - A test to measure the number of waves within 2.5 cm of stockinette using a magnifying glass

**Bursting strength:** A test intended to secure the minimum strength with which the product endures without bursting

**Elongation percentage:** A test to determine the minimum elongation percentage the product can maintain to secure elasticity of stockinette

## 10. Gauze

**Appearance and Description (Thread count, mass, length, width and layers)**

**Purity test: 1) Water-soluble matters** - A test designed to identify any water-soluble substances remaining in the manufacturing process

**2) Acid or alkali** - A test to detect any acidic or alkaline materials used in the manufacturing process if they remain in the product

**3) Dextrin or starch** - A test designed to determine whether glue that is used to make the surface of gauze stiff in the manufacturing process remains in the product

**4) Pigments** - A test to detect blue dye, a complementary color agents used to prevent the dark yellow color to occur because of unstable defatting process of gauze surface

**5) Fluorescent whitening agent** - A test designed to identify whether fluorescent whitening agent is used to increase white color in the product

**6) Sinking rate** - A test designed to evaluate whether gauze is completely defatted during the manufacturing process

**7) Non-cotton gauze fabrics** - A test to detect other fabrics using iodine staining technique because other fabrics may be mixed on intention or poor manufacturing management

**Ash:** A test to measure residual ash after ignition and ashing of the product for the product made of natural ingredients

**Sterility:** A test designed to identify the presence or absence of microbes in the product if sterilization is conducted during the manufacturing process

## 11. Absorbent cotton

**Appearance, Purity (acid or alkali, water-soluble matter, pigments, fluorescent whitening agent, sinking rate, absorption capacity, other fabrics) and Ash**

**Purity (Nep and admixture):** A test designed to ensure that peel or the number of fragments of seed under a certain level when observing the absorbent cotton under transmitted light

**Sterility test:** Set only in sterilized absorbent cotton

## 12. Adhesive bandages

### 12-1. Adhesive bandages (Disposable, fixed type)

**Appearance, Description, and Tensile Strength**

**Adhesion test:** A test to set the minimum threshold needed to maintain proper adhesiveness of bandages

**Purity test (Adhesive matter):** A test designed to make sure that adhesive matters should be remain in the skin significantly which is set in case of adhesive bandage (fixed type)

### 12-2. Wetting bandages (hydrocolloid and foam)

**Appearance, Description, and Tensile Strength**

**Adhesion test:** A test to set the minimum threshold needed to maintain proper adhesiveness of bandages

**Absorption capacity:** A test to set the minimum threshold needed to absorb and maintain discharges (exudate) from the wound in a sufficient manner

## 13. Dental water wipes

**Appearance, Description, Mass, Dose, and pH**

**Purity test: 1) Pigments** - A test designed to identify the presence or absence of pigment elution, etc.

**2) Acid and alkali** - A test to detect elution of the substance when acidic or alkaline materials are used during manufacturing process

**3) Fluorescent whitening agent** - A test designed to evaluate whether fluorescent whitening agent is used and identify significant contamination incurred by hair oil, etc. or manufacturing defects using the fluorescence detection

**4) Formaldehyde** - A test performed because formaldehyde is contained in supporting absorber, etc.

**Sterility test:** A test designed to identify the presence or absence of microbes in the product if sterilization is conducted during the manufacturing process

## II Quasi-drugs defined in Article 2 Subparagraph 7 Item B of the Pharmaceutical Affairs Act

### 1. Mouth rinses (tablet)

**Description**

**Uniformity of Dosage Unit:** A test designed to examine the degree of uniformity of the active ingredients between each formulation, which is set for the contained active ingredients

**Identification:** A test related to the security of quality and efficacy of the product, which is required to identify the active ingredients by setting test methods with specificity for all contained active ingredients

**Content:** A test related to the security of quality and efficacy of the product, which determines the content of the active ingredients with test methods with accuracy, precision and specificity for all contained active ingredients

**Alcohol number:** Set if the product contains ethanol 4% and more (internal formulation only)

### 2. Mouthwash (teeth cleaning)

**Appearance, Identification and Content**

**Mass and volume:** A test designed to estimate the uniformity of content of the active ingredients in the product by measuring the mass of individual formulation considering the deviation of formulation mass as deviation of content for the product in which all ingredients are distributed uniformly

**pH:** Tested in case of liquid formulation, and set within ±1.0 for actual statistics.

**Microbial Limit:** A test to qualify and quantify specific microorganisms which can grow in the product

## 3. Mouthwash (pill type)

**Appearance, Identification, Content, and Microbial Limit**

**Ash:** A test designed to measure the content of minerals contained as impurities or compositions in the product with the amount of residual matters in ignition of the product

**Heavy metal:** Set the test for hazardous matters (heavy metals) that may be mixed or included into the product during the manufacturing process

**Alcohol number:** Set if the product contains ethanol 4% and more (internal formulation only)

## 4. Deodorants

**Description, Mass, Volume, Identification, pH, and Content**

## 5. Anti-miliaria and Anti-inflammation products (External powder)

**Description, Mass, Volume, Identification, Content, and Microbial Limit**

**Particle size/fineness:** A test designed to establish uniformity of quality control by testing particle size of the product in case of powder formulation. For fineness test, see KQC ‘zinc oxide and talc powder

**Purity test (heavy metal and arsenic):** Set if the active ingredients include minerals

## 6. Anti-miliaria, Anti-inflammation Products (zinc oxide ointment)

**Description, Mass, Volume, Identification, Content, and Microbial Limit**

**Purity test (Calcium, magnesium and other foreign matters):** A test to define the purity in the formulation, which regulates the type and limit of ingredients concerned for confounding or mixing or degradation products generated in the preservation if they occur

7. Anti-miliaria, anti-inflammation products (calamine and zinc oxide lotion)

**Description, Mass, Volume, Identification, pH, Content, and Microbial Limit**

8. Toothpaste

**Description, Mass, Volume, Identification, pH, and Content**

9. Bath care products (soap preparations)

**Description, Mass, Volume, Identification, pH, and Content**

10. Bath care products (preparations to be added in the bath)

**Description, Mass, Volume, Identification, Content, and pH.**

11. External products for anti-hair loss or increase in hair thickness

**Description, Mass, Volume, Identification, pH and Content**

12. Hair colorants (bleaching agent and demineralizing agent) with slight effect on human bodies

**Description, Mass, Volume, Identification, and Content**

**Hair coloring:** A test designed to identify the hair-dyeing ability and be set in replacement of content test if there are active ingredients of which content test is not set

13. External formulation to remove body hair

**Description, Mass, Volume, Identification, pH, and Content**

## 14. Insecticides and attracticides for flies and mosquitoes (solid type)

**Description, Mass, Volume, Identification, and Content**

## 15. Mosquito burners (coil type)

**Description, Mass, Volume, Identification, and Content**

**Combustion:** A test designed to measure whether the combustion time of the mosquito burner is appropriate

## 16. Electrical mosquito scent (mat type)

**Description, Mass, Volume, Identification, and Content**

**Fumigation rate:** A test designed to identify the amount of insecticiding ingredients generated after a mosquito scent is fumigated over heat of an electric mosquito scent for a certain period of time.

## 17. Mosquito liquid vaporizers

**Description, Mass, Volume, Identification, and Content**

**Ignition point:** A test designed to measure the ignition point of solvent (petroleum) contained in the products

## 18. Insecticides (powder)

**Description, Mass, Volume, Identification, Content, and particle size**

## 19. Insecticides (oil)

**Description, Mass, Volume, Identification, and Content**

## 20. Insecticides (aerosol)

**Description, Inner weight, Identification, Content, Internal pressure, and Stability**

## 21. Repellents

**Description, Mass, Volume, Identification, pH, and Content**

## 22. Contact lens supplies

**Description, Mass, Volume, Identification, pH, Content, and Microbial Limit**

## 23. Nicotine-free products that can be used to reduce or satisfy the desire to smoke or to improve smoking habits

**Description, Mass, Volume, Identification, pH, and Content**

**Purity (nicotine):** A test to identification the detection of nicotine contained in the product

※ The following tests should be added for herbal products, etc., if necessary.

**Heavy metal, Microbial Limit, etc.**

※ The following tests should be added for electronic products.

**Electrical and machinery safety:** A test designed to measure shock-resistance and electrical leakage of the electrical appliance for the product

## 24. External disinfectants

**Appearance, Mass, Volume, Identification, pH, and Content**

**Sterility test:** A test designed to identify the presence or absence of microbes in the product if sterilization is conducted during the manufacturing process

## 25. External Spray Patch

**Appearance, Identification, Content, Internal weight, Internal pressure, and stability**

## 26. Low-content Vitamin and Mineral Preparations (Tablet and capsule)

**Appearance, Mass, Volume, Identification, Content Microbial Limit, and Disintegration**

## 27. Low-content Vitamin and Mineral Preparations (Liquid)

**Appearance, Mass, Volume, Identification, pH, Content, Microbial Limit, Preservatives**

## 28. Nutrients, Tonic and Alternatives (Liquid)

**Appearance, Mass, Volume, Identification, pH, Content, Microbial Limit, and Preservatives**

## 29. External Liquid Formulation for purpose of cleaning and disinfection of root-canal

**Appearance, Mass, Volume, Identification, and Content test**

## 30. Anti-snoring Solutions

**Appearance, Identification, pH, Microbial Limit, Mass, Volume, and Content**

## 31. Teeth Whitening Solutions

**Appearance, Mass, Volume, Identification, pH, and Content**

## 32. Denture Cleaning Solutions (Tablet)

**Appearance, Mass, Volume, Identification, pH, and Content**

**Disintegration test:** A test designed to determine whether the product is disintegrated under a fixed condition

**Active oxygen:** A test designed to quantify active oxygen, set in replacement of the content test of the active ingredients generating oxygen

# III Quasi-drugs defined in Article 2 Subparagraph 7 Item C of the Pharmaceutical Affairs Act

## 1. Pesticides for infection prevention

**Appearance, Mass, Volume, Identification, pH, and Content (including potentiators)**

**Specific gravity:** A test to determine the acceptance criteria of the specific gravity in case of liquid formulation

**Water:** A test designed to measure water content in case of solid or liquid formulations

**Emulsifiability and emulsifying stability test:** A test set to secure the miscibility between the product and water for emulsifiable formulations designed to be diluted with water

**Miscibility with hydrocarbon oil:** A test set to secure miscibility in case of formulation diluted by diesel or kerosene

**Foam:** A test designed to set the generated foam under a certain volume in case of liquid formulation to be used after dilution

**Particle size**: A test designed to be set in case of powder, granules and wettable powder, and to measure the amount of residues on sieve No. 200 (74㎛) for wettable powder

**Suspensibility:** A test designed to be set to observe whether suspensibility is maintained by observing the precipitation when wettable powder is mixed with water and left

**Wetting:** A test designed to identify whether wetting takes place by adding sample in the water in case of wettable powder

**Precipitation:** A test designed to measure the changes in specific gravity when the suspension of wettable powder is left

**Potency:** A test to replace the content test with the efficacy test which compares the product with standard preparation in case that the active ingredient is B.T.I formulation

※ B.T.I formulation: Bacillus thuringiensis israelensis and any products using B.T.I,

which is used as the active ingredient for mosquito larvae extirpator

**Emission**: A test to measure the emission rates of the active ingredients for a certain period of time because the emission rate affect the efficacy of the product in CS formulation. It may not be set in case of rapid release formulation.

※ Capsule Suspension (CS) formulation: CS with purpose of controling release speed and amount by compounding and suspensing the original agent after microcapsulation

**Purity test:** Set beta exotoxin element test if the active ingredient is B.T.I

## 2. Rodenticide

**Appearance, Mass, Volume, Identification, and Content**

**Specific gravity and pH:** Set in case of liquid formuation

**Water:** A test designed to measure the water content in case of solid or liquid formulations

**Particle size:** Set in case of powders, granules and wettable powder

## 3. Sterilized Disinfectant for prevention of infectious disease

**Appearance, Mass, Volume, Identification, pH, and Content**

**Particle size:** Set in case of powders, granules and wettable powder

**Emulsifiability and emulsifying stability**: A test set to secure the miscibility between the product and water for emulsifiable formulations designed to be diluted with water

**Suspensibility**: A test designed to be set to observe whether suspensibility is maintained by observing the precipitation when wettable powder is mixed with water and left

**Wetting**: A test designed to identify whether wetting takes place by adding sample in the water in case of wettable powder

**Precipitation test**: A test designed to measure the changes in specific gravity when the suspension of wettable powder is left

# Document History

## Guideline on Establishment of Test Item in Preparation of Standards and Analytical Methods of Quasi-drugs

| Enactment and Revision No. | Date of Approval | Description |
|---|---|---|
| B1-2009-3-011 | May 28, 2010 | Enacted Guideline on Establishment of Test Item in Preparation of Standards and Analytical Methods of Quasi-drugs |
| B1-2015-3-003 | May 21, 2015 | Revised Guideline on Establishment of Test Item in Preparation of Standards and Analytical Methods of Quasi-drugs |
| B1-2016-3-005 | Aug 31, 2016 | Revised Guideline on Establishment of Test Item in Preparation of Standards and Analytical Methods of Quasi-drugs |

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Date of Publication : August 2016

Employee in charge : Sohn Yeo-won

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Published by : Cosmetics Evaluation Division, Biopharmaceutical and Herbal Medicine Evaluation Department in the National Institute of Food and Drug Safety