

A Review on Turmeric Bath Bomb

**Birajdar Aditya Bankat¹, Tale Santosh Maroti², Borphale Pallavi Rajendra³,
Suryawanshi Vishal Vyankat⁴, Somwanshi B. T.⁵**

Students, B pharmacy, Shivlingeshwar College of Pharmacy, Almala, India^{1,2,3,4}.

Assistant Professor, Department of Pharmacology, Shivlingeshwar College of Pharmacy, Almala, India⁵

Abstract: *In primitive times, cosmetics were linked to religion, hunting, and combat. After then, it is used as a health and cosmetic product. Acne, wrinkles, and oily skin are among the many skin disorders that cosmetics are designed to treat. Due to its anti-inflammatory, antioxidant, and antibacterial qualities, turmeric has long been a mainstay of traditional medicine and skincare products, especially in Ayurvedic and Chinese medicine. Turmeric has been included into contemporary skincare products over time, and oils, lotions, and masks containing turmeric are becoming increasingly well-liked. The **turmeric bath bomb** is one such item that has just lately become popular in the wellness and cosmetics sector. This cutting-edge bath product offers both skincare and relaxation in one product by fusing the exquisite sensation of a bath bomb with the therapeutic advantages of turmeric.*

Keywords: Bath bomb, Turmeric benefits, Ayurvedic, Natural pain relief, Relaxing, reduce stress

I. INTRODUCTION

The market for turmeric bath bombs is expanding steadily due to rising consumer desire for natural, wellness-focused goods. Turmeric bath bombs stand out as a natural solution for a range of skin issues, from eczema and acne to dryness and signs of aging, as customers continue to look for alternatives to chemical-laden skincare products. With its calming bath experience and skin-rejuvenating properties, the product's capacity to offer both emotional and physical relaxation has helped to fuel its rising popularity.

The purpose of this review is to examine the various facets of turmeric bath bombs, such as their composition, manufacturing process, advantages, drawbacks, consumer preferences, industry trends, sustainability issues, and next developments. We will also examine the regulatory environment that surrounds these items in order to give a thorough grasp of their creation and application in the international market.

HISTORY

It's possible that bath bombs have their roots in traditional bathing practices that employed salts and oils for medicinal effects. However, the modern bath bomb as we know it today was introduced in the 1980s by Mo Constantine, a co-founder of Lush. Constantine developed the sparkling, fragrant experience of bath bombs by experimenting with ingredients like baking soda, citric acid, and essential oils—all of which were inspired by the fizz of Alka-Seltzer tablets. The luxurious sensory experience and skincare advantages of bath bombs have become immensely popular since Lush's 1989 launch of "Aqua Sizzlers," which sparked a trend in the cosmetics industry. These days, bath bombs are prized for their ability to encourage skin hydration and relaxation, providing a luxurious distraction from routine self-care routines. (1,2) Bath bomb: The Greek term "kosmtikos," which denotes ornamental art, is where the word "cosmetics" originates [4,7]. It used to be used to paint the body to kill enemies and animals and to intimidate people. Until 3000 BC, in addition to aging. Skin beauty is influenced by environmental changes, lifestyle choices, and health [5,7]. Due to their wide availability and little pleiotropic effects, herbal cosmetics are currently attracting a lot of interest. The market is stocked with enough plants and plant extracts for cosmetic usage [6, 7]. Cosmetics is a Greek word that means "adorn," as in giving someone or something something ornamental. The FD&CA defines cosmetics as products that are intended to be rubbed, poured, sprangled, or sprayed on the human body in order to cleanse, beautify, market elegance, or alter appearance.



feeling revitalized. Drying them out renders them dormant. These components work together to produce that fizzing sound. They also clean, deodorize, and repair skin and pores, and they strengthen blood vessels. Among the basic ingredients are maize starch, baking soda, and citric acid. These paintings make a water-fizzing tub bomb when combined. Sodium bicarbonate (NaHCO_3) is the main ingredient in bath bombs and other products that create foam and fizz. It typically manifests as a white, crystalline powder or granule. In addition to its common name, sodium bicarbonate has numerous other names and uses.

THE BENEFITS OF TURMERIC IN BATH BOMBS

The ginger family's turmeric (*Curcuma longa*) is a flowering plant that is well-known for its rhizomes, which contain curcumin, the ingredient that gives it its vivid yellow color and numerous health advantages. Turmeric has several potential advantages for skin and general health when used to bath bombs.

Characteristics of an Anti-Inflammatory

The anti-inflammatory properties of turmeric are among its most prominent advantages. Curcumin, the main ingredient in turmeric, has been demonstrated to lessen inflammation both internally and topically. Turmeric is useful for sunburns, psoriasis, acne, and eczema since it can help calm irritated or inflamed skin when added to bath bombs. Because of its anti-inflammatory qualities, it's also a great option for people with sensitive skin because it soothes the skin without irritating it.

ANTIOXIDANT PROTECTION

Turmeric's curcumin also has antioxidant qualities that can aid in scavenging the body's damaging free radicals. Antioxidants are essential in combating oxidative stress, and free radicals are believed to play a part in skin aging. Turmeric, when added to bath bombs, can prevent premature aging of the skin, minimizing the visibility of wrinkles and fine lines, and encouraging a more young and bright complexion. This makes consumers looking for anti-aging advantages especially fond of turmeric bath bombs

SKIN BRIGHTENING AND EVENT ONE

Turmeric is traditionally renowned for its ability to lighten the skin and improve its overall tone. Turmeric's antioxidant and anti-inflammatory qualities aid in the reduction of pigmentation, black spots, and uneven skin tone. Turmeric bath bombs are popular because of its natural skin-brightening properties, which may result in brighter, more even skin with regular use.

ANTIMICROBIAL AND ANTISEPTIC EFFECTS

Turmeric's capacity to fight against germs and other microbes is another important advantage. As a natural treatment for cuts, wounds, and other skin infections, it has been used for ages. Turmeric in a bath bomb aids in skin cleansing, lowering the risk of bacterial growth and enhancing general skin health. Because turmeric has antibacterial qualities that can help prevent breakouts and promote smoother skin, it is especially advantageous for people with acne-prone skin to use turmeric bath bombs.

SOOTHING AND RELAXING EXPERIENCE

Turmeric bath bombs provide a soothing bathing experience in addition to their skin-benefitting properties. The effervescent qualities of the bath bomb and the warm water serve to quiet the mind, relax muscles, and soothe the body. Because of this, turmeric bath bombs are a fantastic option for anyone looking to relax after a demanding day, lower stress levels, and enhance general wellbeing. Turmeric's anti-inflammatory and antioxidant properties contribute to this experience, making it both restorative and decadent.



KEY INGREDIENTS IN TURMERIC BATH BOMB

The formulation of turmeric bath bombs involves a combination of ingredients that work together to create a soothing, effervescent experience while delivering the therapeutic benefits of turmeric. While turmeric powder is the star ingredient, several other ingredients play crucial roles in the product's effectiveness and appeal.

TURMERIC POWDER - The primary ingredient in turmeric bath bombs, turmeric powder is responsible for delivering the product's characteristic golden color and therapeutic benefits. The curcumin in turmeric is the key active compound, known for its anti-inflammatory, antioxidant, and antimicrobial properties. It is essential to use high-quality turmeric powder to ensure that the bath bomb provides the desired benefits without excessive staining or irritation.



SODIUM BICARBONATE (BAKING SODA) - Sodium bicarbonate, commonly known as baking soda, is a key ingredient in most bath bombs. It acts as a base and combines with citric acid to create the effervescent reaction when the bath bomb is placed in water. This reaction produces bubbles, which help to dissolve the bath bomb and release its ingredients into the water, creating a relaxing, fizzy experience. Baking soda also helps to soften the skin, leaving it feeling smooth and hydrated after the bath.



CITRIC ACID - Citric acid, derived from citrus fruits, is another essential component in bath bombs. When combined with baking soda, citric acid initiates the effervescent reaction that makes bath bombs fizz in water. Citric acid also helps balance the pH of the water, making it gentler on the skin. In addition, it serves as a preservative, extending the shelf life of the bath bomb and preventing it from losing its effectiveness over time.





ESSENTIAL OILS - Essential oils are commonly used in bath bombs to provide fragrance and enhance the bath experience. While turmeric bath bombs may contain essential oils such as lavender, eucalyptus, or peppermint, some formulas may also use citrus oils to complement the bright, rejuvenating properties of turmeric. These oils add an extra layer of relaxation and therapeutic effects, targeting specific skin concerns or providing a soothing, calming experience



EPSOMSALT - Epsom salt, or magnesium sulfate, is often added to bath bombs for its muscle-relaxing and stress-reducing properties. When dissolved in water, Epsom salt can help alleviate muscle pain, reduce inflammation, and promote relaxation. This makes Epsom salt a complementary ingredient in turmeric bath bombs, as both ingredients work together to soothe the body and calm the mind.



CORNSTARCH – Cornstarch is often included in bath bomb formulations as a stabilizer. It helps bind the ingredients together, preventing the bath bomb from crumbling before use. Additionally, cornstarch helps soften the skin, creating a silky feeling after the bath



THE FORMULATION OF TURMERIC BATH BOMBS

The formulation of turmeric bath bombs is a delicate process that requires precise measurements and careful mixing of ingredients. The goal is to create a product that fizzes effectively, delivers the benefits of turmeric, and is aesthetically pleasing while ensuring that the turmeric does not stain the skin or the bathtub. Below is an overview of how turmeric bath bombs are typically formulated.

STEP1: MIXING DRY INGREDIENTS

The first step in formulating turmeric bath bombs is to combine the dry ingredients. This includes the turmeric powder, sodium bicarbonate, citric acid, cornstarch, and any coloring agents. These ingredients are sifted together to ensure that they are evenly distributed, which helps the bath bomb react uniformly when it hits the water.

STEP2: MIXING WET INGREDIENTS

Next, the wet ingredients are prepared. This includes essential oils, water or witch hazel (which helps bind the mixture), and any additional oils such as coconut oil or olive oil for skin hydration. The essential oils are carefully selected to complement the healing properties of turmeric and may include oils such as lavender, chamomile, or sandalwood.

STEP3: COMBINING WET AND DRY INGREDIENTS

Once the wet ingredients are added, the mixture is slowly blended to avoid triggering the effervescence reaction too soon. The mixture should have a damp, crumbly texture that holds together when pressed into a mold. Care must be taken during this step to ensure that the ingredients are well integrated but not overworked.

STEP4: MOLDING

The mixture is then pressed into bath bomb molds. These molds can vary in shape, but round molds are the most common. The mixture is packed tightly into the molds to ensure that the bath bomb holds its shape during the drying process. Molding is crucial to ensure that the bath bomb will hold together and maintain its fizzing action when placed in water.

STEP 5: DRYING

Once molded, the bath bombs are left to dry for 24-48 hours, depending on the humidity and temperature. The drying process allows the bath bombs to harden, ensuring that they will maintain their shape and perform as intended in the bath. The drying time is essential to prevent premature fizzing or crumbling when the bath bomb is removed from the mold.



STEP 6: PACKAGING

After drying, the turmeric bath bombs are carefully removed from the molds and inspected for quality. They are then packaged, often in eco-friendly materials such as cardboard boxes, biodegradable wraps, or glass jars. The packaging is designed to protect the bath bombs from moisture and damage while maintaining their aesthetic appeal.

MARKET TRENDS AND CONSUMER DEMAND FOR TURMERIC BATH BOMBS

The market for bath bombs has experienced significant growth in recent years, driven by a broader shift toward natural and self-care products. Within this growing sector, turmeric bath bombs are emerging as a popular choice among consumers who are increasingly looking for holistic skincare solutions. This section explores the market dynamics, consumer preferences, and trends driving the turmeric bath bomb industry.

RISE IN DEMAND FOR NATURAL SKIN CARE PRODUCTS

The demand for natural skincare products has been steadily increasing, as consumers become more aware of the potential dangers of synthetic chemicals and the environmental impact of conventional beauty products. This trend is particularly evident among millennials and Generation Z, who prioritize sustainable, cruelty-free, and eco-friendly products. The growing inclination toward plant-based and natural ingredients has contributed significantly to the rise in popularity of turmeric bath bombs. Turmeric, with its well-documented benefits for the skin, is seen as a key ingredient in the natural skincare movement.

CONSUMER PREFERENCES FOR MULTI-FUNCTIONAL PRODUCTS

Modern consumers are seeking products that offer multiple benefits in one package. Turmeric bath bombs, with their combination of relaxing bath experiences and skincare benefits, fit perfectly into this consumer trend. In addition to their calming effects, turmeric bath bombs offer anti-inflammatory, antimicrobial, and antioxidant properties, making them highly attractive to individuals with specific skincare needs such as acne, eczema, or skin aging concerns. Consumers increasingly want products that not only provide sensory experiences but also contribute to their overall well-being and health.

POPULARITY OF DIY AND CUSTOMIZATION

Another trend influencing the turmeric bath bomb market is the rise of DIY skincare and personalized beauty products. Consumers are showing greater interest in creating their own bath products, often using natural ingredients like turmeric to customize the formulation according to their preferences. This trend is seen as a way for individuals to ensure the quality and safety of their products while aligning with their personal skincare needs. Many brands are responding to this demand by offering turmeric bath bomb kits or DIY recipes, encouraging consumers to engage in the creation process and personalize their bath bomb experiences.

GROWING INTEREST IN SUSTAINABLE AND ECO-FRIENDLY PRODUCTS

Sustainability is a key consideration for today's consumers, and this trend is particularly important in the beauty and wellness industries. The environmental impact of manufacturing, packaging, and disposal of skincare products has prompted many companies to adopt greener practices. For turmeric bath bombs, eco-friendly packaging, such as recyclable cardboard boxes or biodegradable wraps, is becoming increasingly common. Additionally, some brands focus on sourcing organic turmeric and other natural ingredients, ensuring that the bath bombs are produced sustainably and ethically. These practices align with the growing desire among consumers for products that are not only good for their skin but also have a positive environmental impact.

INCREASED ACCESSIBILITY THROUGH ONLINE RETAIL

The growth of online retail platforms has made it easier for consumers to access a wider range of skincare products, including turmeric bath bombs. Online shopping provides consumers with the opportunity to explore different brands,



read reviews, and compare prices, making it easier to find products that meet their specific needs. Social media platforms also play a significant role in promoting turmeric bath bombs, as influencers and beauty enthusiasts share their experiences with the product, further fueling demand. This trend is expected to continue as e-commerce continues to dominate the retail landscape.

MANUFACTURING CHALLENGES AND CONSIDERATIONS

While the demand for turmeric bath bombs continues to grow, manufacturers face a range of challenges in producing high-quality products that meet consumer expectations. This section highlights the key challenges in the manufacturing process of turmeric bath bombs and the considerations that manufacturers must take into account to ensure product success.

CONSISTENCY AND QUALITY CONTROL

One of the primary challenges in the manufacturing of turmeric bath bombs is maintaining consistency in quality. Turmeric powder, while an effective ingredient, can vary in its potency and color due to factors such as the origin of the turmeric, the extraction method, and storage conditions. This variation can lead to inconsistency in the final product, making it challenging to produce bath bombs that have the same intensity of color and benefits with every batch. Manufacturers must invest in high-quality sourcing, rigorous testing, and quality control processes to ensure that each batch of turmeric bath bombs meets the desired standards.

BALANCING INGREDIENT RATIOS

The formulation of bath bombs is a delicate balance of dry and wet ingredients. Too much of one ingredient can cause the bath bomb to either crumble or fail to fizz properly in water. Achieving the perfect balance of ingredients such as baking soda, citric acid, turmeric, and essential oils is critical to ensuring that the bath bomb performs as expected. Manufacturers must carefully measure and test each ingredient to create a formula that delivers the right effervescence, fragrance, and therapeutic benefits without compromising the product's texture or performance.

STAINING CONCERNS

Although turmeric's yellow color is one of its most attractive features, it can also present challenges in manufacturing. Turmeric bath bombs are often associated with the risk of staining the skin, clothing, and bathtubs. To address this issue, manufacturers must ensure that the concentration of turmeric powder is well-controlled and that the bath bomb is properly formulated to avoid staining. Some brands opt for a lower concentration of turmeric or mix the turmeric with other ingredients like cornstarch to minimize its staining potential, while others may offer formulations with additional ingredients to prevent any discoloration of the skin or bathtub.

ENSURING LONGS HELF LIFE

Turmeric bath bombs must also be formulated with a long shelf life in mind. Due to their effervescent nature, bath bombs are prone to moisture absorption, which can cause them to lose their fizz and effectiveness over time. Manufacturers must ensure that the bath bombs are packaged properly to prevent exposure to air and moisture, which can lead to product degradation. Packaging that is both airtight and moisture-resistant is crucial to maintaining the integrity of the bath bomb during storage and transport.

REGULATORY AND SAFETY STANDARDS

Additionally, producers of turmeric bath bombs have to follow all applicable safety and regulatory requirements, especially for beauty items. The European Medicines Agency (EMA), the U.S. Food and Drug Administration (FDA), and other regulatory agencies have established safety standards that must be followed when adding turmeric and other essential oils to bath products. To avoid negative responses and guarantee customer safety, it is crucial to make sure turmeric bath bombs fulfill these requirements. A crucial step in the production process is testing for allergies, skin irritation, and other possible hazards.



CONSUMER ACTIONS AND RESOURCES

Manufacturers and marketers of turmeric bath bombs must have a thorough understanding of consumer behavior. The elements influencing consumer preferences and choices while buying bath products infused with turmeric are examined in this section.

PRICE SENSITIVITY AND PRODUCT VALUE

Price plays a significant role in consumer decision-making, particularly in a market that is increasingly crowded with natural and organic products. While turmeric bath bombs are generally priced higher than traditional bath products, consumers are willing to pay a premium for products that offer natural ingredients and therapeutic benefits. The perceived value of the product, including its benefits for the skin and overall wellness, often outweighs price considerations. However, brands must strike a balance between quality and affordability to appeal to a broad consumer base.

PACKAGING AND AESTHETICS

In the beauty and wellness industry, packaging is a key driver of consumer choice. The aesthetic appeal of a product can strongly influence purchase decisions, especially when it comes to bath products that are often seen as indulgent or luxury items. Turmeric bath bombs, with their vibrant golden color and unique appearance, are designed to stand out on shelves and online platforms. Creative packaging, such as eco-friendly materials, reusable containers, and aesthetically pleasing designs, can enhance the overall appeal of the product and attract environmentally conscious consumers.

Product transparency and sourcing of ingredients

Customers are demanding more transparency from firms as they learn more about the contents in the skincare products they use. Customers are curious about the origins of turmeric and whether it is organic, cruelty-free, and responsibly harvested when purchasing turmeric bath bombs. Brands are more likely to win over customers' trust and loyalty if they are transparent about the origin and caliber of their components, such as using organic turmeric or fair-trade methods.

Aspects of sustainability and environmental impact

Manufacturers are being increasingly conscious of the environmental impact of their products as the demand for turmeric bath bombs rises. The sustainability issues surrounding the manufacturing of turmeric bath bombs are covered in this section, along with how companies are responding to these issues.

ECO-FRIENDLY PACKAGING

Packaging waste is a significant issue in the beauty and wellness industry, and bath bomb manufacturers are increasingly turning to sustainable packaging options. Eco-friendly packaging, such as recyclable cardboard, biodegradable wraps, and reusable glass containers, is becoming more common in the bath bomb market. By using sustainable materials, brands can reduce their carbon footprint and help minimize plastic waste. Eco-conscious consumers are more likely to choose turmeric bath bombs that are packaged in environmentally friendly materials, contributing to the overall sustainability of the product.

SUSTAINABLE SOURCING OF INGREDIENTS

Sustainable sourcing of ingredients is another important consideration in the production of turmeric bath bombs. The cultivation of turmeric, like many other crops, can have significant environmental and social impacts, particularly when grown in regions with limited environmental regulations. To address this, many brands are now sourcing organic and fair-trade turmeric, ensuring that their ingredients are grown using sustainable farming practices. This approach not only supports environmentally friendly agricultural practices but also ensures that workers are paid fairly and treated ethically.



REDUCING CARBON FOOTPRINT

Manufacturers of turmeric bath bombs are also taking steps to reduce their carbon footprint by optimizing their production processes. By utilizing renewable energy sources, reducing waste, and streamlining transportation logistics, companies can reduce their environmental impact. Additionally, some brands are adopting carbon offset programs to balance out the emissions generated during production and distribution. These initiatives align with the growing consumer demand for eco-conscious products and contribute to a more sustainable industry.

CUSTOMIZING YOUR TURMERIC BATH BOMBS

For Sensitive Skin: If you have sensitive skin, consider using gentler essential oils like chamomile or rose, which are known for their soothing properties. **For Added Moisture:** If you prefer extra moisturizing properties, increase the amount of coconut oil or add a few drops of sweet almond oil or jojoba oil. **For Extra Exfoliation:** Add some finely ground oats or sugar to the dry ingredients for a gentle exfoliating effect. These ingredients can help remove dead skin cells and leave the skin feeling soft. (11)

APPLICATION OF BATH BOMBS

- i. Collect the bath bomb and remove the wrapper of it.
- ii. Now dip the bath bomb into bathtub.
- iii. Ingredients of bath bomb come into contact with water.
- iv. Formation of bubbles due to release of Carbon dioxide gas.
- v. The ingredients of bath bomb released into bathwater.
- vi. Ingredients contact with skin and produce specific effects.

EVALUATION OF BATH BOMB

The prepared herbal bath bomb was evaluated by its various parameters, such as physical Appearance, pH test, effervescent time, stability testing, skin patch test, etc.

i. Physical appearance Evaluation

The evaluation of physical appearance parameters such as color, shape, and texture were carried out. Color and texture was evaluated by vision and touch sensation respectively.

ii. pH Test (Digital pH Meter)

The pH test method of measuring the acid or the basic level of any substances. The pH level of bath bomb can vary depending on the specific formulation and ingredients Used.

Method: 2g of the sample was taken and pH paper was placed on it. Combine bath bomb in 500 ml distilled water. Now collect the 10 ml of water sample to check the pH with the help of pH meter. Standard value for Turmeric bath bomb – 6.44

iii. EFFERVESCENT TIME

The Bath bomb was dipped into 500 ml of water and the time required to produce foams Calculated. Standard Time (45-50 seconds).

iv. SKIN PATCH TEST

A skin patch test for a bath bomb involves applying a small amount to a discreet area of your skin, like the inside of your wrist or finger, and waiting 10 minutes to check for any allergic reactions or irritation.

STABILITY TEST Stability testing for bath bombs checks how they hold up over time, examining factors like color, scent, fizziness, and texture under different conditions such as temperature and Humidity changes. Samples of bath bombs became stored beneath room temperature for 2 weeks and the Modifications acquired if any are noted.

v. ANGLE OF REPOSE

The angle of repose test for bath bombs assesses the FLOWABILITY AND STABILITY OF THEIR POWDER mixture by measuring the angle at which the mixture starts to slide on a flat surface. This helps in optimizing the bath bomb formulation for improved performance. The height and diameter of the resulting cone are measured and the angle of repose Calculated from this equation $\text{Angle of Repose} = \theta = \tan^{-1} (h/r)$



Where

h–Heightoftheheap, r – Radius of the base

TAPPEDDENSITY

Tapped density testing is a method to determine the density and packing behavior of bath Bomb powder. It entails tapping the powder to settle it and then measuring the volume it Occupies. This analysis provides insights into particle packing, which is crucial for bath Bomb quality and performance.

Tappeddensity=Weightofsample(w)/Tappedvolume(v)

II. CONCLUSION

Turmeric bath bombs offer a unique and beneficial addition to the bath and wellness industry, combining the healing properties of turmeric with the relaxation of a warm bath. From their rich history in traditional medicine to their current popularity in modern self-care rituals, turmeric bath bombs provide a holistic approach to skincare and wellness. With their numerous benefits, including anti-inflammatory, antioxidant, and antibacterial properties, turmeric bath bombs can improve skin health, promote relaxation, and contribute to a sense of overall well-being.

The market for turmeric bath bombs continues to grow, driven by consumer demand for natural and eco-friendly products, as well as the increasing interest in holistic wellness practices. As more individuals seek out products that align with their values and offer tangible health benefits, turmeric bath bombs are poised to remain a popular choice for self-care enthusiasts worldwide.

For those looking to make their own turmeric bath bombs, the process is simple, and with a few key ingredients, anyone can enjoy the therapeutic benefits of turmeric in the comfort of their own home. Whether purchased from a store or made DIY, turmeric bath bombs represent a blend of ancient wisdom and modern self-care practices, offering a natural solution for relaxation, skincare, and overall wellness.

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