SIPPY CUPS, SPOUT BOTTLES, AND A CRITICAL GAP IN INFANT PRODUCT SAFETY REGULATIONS

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ABSTRACT

This Note examines a significant regulatory gap in India's safety framework for infant feeding products, arising from the exclusion of sippy cups, spout bottles, straw bottles, and similar containers from mandatory oversight. Although plastic feeding bottles are regulated under the IMS Act, 1992 and IS 14625:2015, both instruments adopt a narrow definition of "feeding bottle" that is limited to containers fitted with teats and used for infant milk substitutes. This restrictive formulation leaves out a wide range of products that serve the same functional purpose and come into direct contact with infants' mouths and consumables, thereby creating an inconsistently protected product landscape.

The Note situates this issue within the broader concerns surrounding Bisphenol A (BPA), an endocrine-disrupting chemical used in polycarbonate plastics. International scientific authorities have repeatedly warned of infants' heightened susceptibility to BPA exposure. Drawing on a 2019 survey conducted by Toxics Link across multiple Indian cities, the Note highlights prevalent consumer confusion between feeding bottles and sippy cups, low awareness of BPA-related risks, and the limited market availability of verified BPA-free alternatives. These findings underscore how regulatory ambiguity allows potentially unsafe products to circulate widely.

A comparative analysis of foreign frameworks—including those of the United States, Malaysia, and the European Union—shows that these jurisdictions regulate all infant feeding and drinking equipment comprehensively, regardless of design or accessory. India's approach, by contrast, remains fragmented, and attempts to broaden regulatory coverage—such as the BIS Draft Standard of 2023—have not progressed to notification.

The Note concludes that the current regulatory structure is insufficient to safeguard infant health and permits manufacturers to avoid compliance through minor modifications in product design. It emphasises the need for legislative and standard-setting reforms to ensure uniform safety requirements across all categories of infant feeding containers.

INTRODUCTION

Infant feeding containers, bottles, and cups have become an everyday sight, finding widespread use across households of all socio-economic backgrounds. Their popularity with consumers can be attributed to: (i) a convenient way for parents to store milk and other liquids and (ii) its design, which makes it easier for babies to hold and drink, aiding in the development of their early hand-eye coordination and fine motor skills.

These feeding products are available in a wide variety of shapes, sizes, and designs, often adorned with colourful stickers and cartoons to appeal to children and parents alike. Typically classified based on the material of the container—such as glass, plastic, or stainless steel—and are frequently accompanied by teats, spouts, straws, or other drinking accessories.

Given that these bottles and cups come into direct contact with both the infant's mouth and the liquids they consume, it is essential that the safety standards governing their manufacture and sale are sufficiently stringent. Ensuring the safety of such products is a matter of public health importance, particularly in light of potential exposure to harmful chemicals such as Bisphenol A.

This Article aims to examine a critical gap in India's product safety regulations, wherein plastic sippy cups, spout bottles, and similar infant feeding products remain outside the scope of mandatory safety standards. It discusses the health risks associated with exposure to Bisphenol A, presents findings from a 2019 field survey conducted by Toxics Link on consumer usage and awareness, and analyses the limitations of the existing legal framework under the IMS Act and BIS standards.

A. WHAT IS BPA AND WHY IS IT A CONCERN?

Bisphenol A ("BPA") is a chemical used in polycarbonate plastics and epoxy resins, commonly used in the container and linings of baby bottles, sippy cups, and food containers. It can leach into food or liquids, especially when heated, and is classified as an endocrine disruptor**.** [1] The European Food Safety Authority (EFSA) considers BPA harmful as it can leak into food and drinks, especially when heated, causing problems such as weakened immunity (raising risks of

[1] European Food Safety Authority, *Opinion of the Scientific Panel on Food Additives, Flavourings, Processing Aids and Materials in Contact with Food (AFC) on Bisphenol A* (2006) EFSA Journal 428.

allergies or asthma), fertility issues, developmental delays in children, and higher chances of certain cancers, with infants and toddlers being particularly vulnerable due to their developing physiology.[2]

Many countries have already recognized BPA as a harmful substance and imposed bans on its use in infant products. Canada[3] was among the first to classify BPA as toxic and prohibit it in infant feeding bottles, while the European Union[4] and China[5] soon followed with similar restrictions. In recent years, regulators in the EU and other jurisdictions have also begun extending controls to food-contact products used by adults[6], citing cumulative exposure risks, reflecting a broader global trend towards phasing out BPA from all consumer goods.

Given the vulnerability of infants and toddlers to such exposures, it becomes essential to examine how these feeding products are used and understood in everyday settings. In this regard, findings from a 2019 field survey conducted by Toxics Link—a Delhi-based non-profit working on issues of toxic waste and its impact on health and the environment—shed light on prevailing consumer practices and awareness levels related to feeding bottles and sippy cups.

B. INSIGHTS FROM TOXIC LINK'S 2019 SURVEY ON FEEDING BOTTLES AND SIPPY CUPS

A 2019 field survey conducted by Toxic Link across Delhi, Meerut, Kolkata, Pune, and Hyderabad involving 250 consumers and 50 retailers reveals significant knowledge gaps, usage patterns, and regulatory concerns around plastic feeding bottles and sippy cups.**[7]** The findings expose serious risks arising-connector from product confusion, low awareness of harmful

[2] European Food Safety Authority, *Scientific Opinion on the Risks to Public Health Related to the Presence of Bisphenol A (BPA) in Foodstuffs* (2015) EFSA Journal 13(1):3978.
[3] *Infant Feeding Bottle Nipples Regulations*, SOR/2016-607 (Canada).
[4] European Committee for Standardization, *EN 14350-1:2004 Child Use and Care Articles – Drinking Equipment for Children – General and Mechanical Requirements and Tests* (approved April 2004, superseded by *EN 14350:2020*).
[5] Ministry of Health (China), *Notice on the Prohibition of Bisphenol A in Baby Bottles*, Bulletin 15 of 2011 (23 May 2011) http://www.moh.gov.cn/publicfiles/business/htmlfiles/mohwsjdj/s7891/201105/51866.html accessed 29 August 2025.
[6] European Food Safety Authority, *Re-evaluation of the Risks to Public Health Related to the Presence of Bisphenol A (BPA) in Foodstuffs* (2023) EFSA Journal 21(4):6857.
[7] Toxics Link and others, *Bisphenol-A (BPA) in Sippy Cups and Feeding Bottles* (2019) https://toxicslink.org/wp-content/uploads/2022/08/BPA%20in%20sippy%20cups%20and%20feeding%20bottles.pdf in sippy cups and feeding bottles.pdf accessed 29 August 2025.

chemicals like BPA, and a complete lack of enforcement on newer feeding products such as sipper and spout bottles.

Despite socio-economic diversity, most surveyed consumers reported routine use of plastic feeding bottles, with sippy cups also widely used to feed milk and other liquids. Alarmingly, however, many could not differentiate between a feeding bottle and a sippy cup. This is particularly concerning in better-resourced urban settings such as Pune and Hyderabad, where one would reasonably expect a higher degree of awareness and product discernment.

Awareness of BPA—an endocrine-disrupting chemical banned in infant feeding bottles by BIS regulations—is notably low. In Delhi and Meerut, 90% and 94% of consumers, respectively, were unaware of BPA-related health risks or applicable regulations. Even in cities like Pune (44%) and Hyderabad (34.6%), awareness remained worryingly inadequate, particularly considering the concentration of educated, middle-income families in these cities. Among the minority of consumers who were informed, the most common sources were the internet, healthcare professionals, and family members.

When informed, however, many consumers across regions expressed strong support for specific regulation of sippy cups, citing their use for infants and the absence of labelling or quality standards. This latent demand for regulatory oversight is not being met by current policies.

Retailers, on the other hand, demonstrate even less awareness or concern. While they continue to sell both feeding bottles and sippy cups—citing demand driven by affordability and convenience—most neither stock BPA-free products nor see a need for product-specific regulation. The lack of product segregation on shelves further reinforces consumer confusion and weakens market-driven incentives for safety compliance.

Summary of Key Insights from Toxic Link's 2019 Survey

Table/Ref	Issue Studied	Key Insight	Analysis
Table 5	Use of plastic feeding bottles	Widespread use across income groups and cities	Indicates feeding bottles are a standard childcare item regardless of affordability or awareness

Table/Ref	Issue Studied	Key Insight	Analysis
Table 7	Differentiation between bottles and sippy cups	Most consumers cannot distinguish between the two	Raises serious concerns as regulatory protection applies only to feeding bottles, not sippy cups
Table 14	Awareness of BPA	90% unaware in Delhi, 94% in Meerut; modest awareness in Pune (44%) and Hyderabad (34.6%)	Even in urban, educated cities, awareness of BPA and related risks is surprisingly low
Table 16	Support for sippy cup regulation	High consumer support for regulation based on health concerns	Indicates that once informed, consumers favour tighter product controls
Table 25	Retailers stocking BPA-free products	Very few retailers offer BPA-free variants	Market lacks both supply and demand pressure for safer alternatives
Table 29	Retailer view on sippy cup regulations	Most do not see the need for regulation	Reflects deep gaps in retailer education and their potential role in guiding safer consumer choices

The implications of these findings are stark. It is evident that consumers cannot meaningfully differentiate between feeding bottles and sippy cups, a trend visible even in metropolitan cities like Pune and Hyderabad, where one would expect greater awareness. Moreover, these plastic feeding containers and sippy cups are routinely used as a cheaper substitute for feeding bottles, especially in low-income households. This calls for urgent attention from regulators and policymakers to establish clearer standards and stronger legislation that meaningfully extend safety protections to all infant feeding products.

C. APPLICABLE LEGAL AND REGULATORY FRAMEWORK

Feeding bottles are generally governed by two major legislations, first, the Infant Milk Substitutes, Feeding Bottles and Infant Foods (Regulation of Production, Supply and Distribution) Act, 1992 ("IMS Act") and second, the Indian Standard IS 14625:2015 under the BIS Act, 2016.

1. Infant Milk Substitutes, Feeding Bottles and Infant Foods (Regulation of Production,

Supply and Distribution) Act, 1992

The IMS Act defines a ***"feeding bottle"*** under Section 2(c)[8] as:

"Any bottle or receptacle used for the purpose of feeding infant milk substitutes, and includes a teat and a valve attached or capable of being attached to such bottle or receptacle."

The definition suffers from two key deficiencies, or at the very least, leaves room for adverse interpretation. First, it limits the scope of a feeding bottle to receptacles *"used for the purpose of feeding infant milk substitutes."* Anchoring the definition of a feeding bottle to its use for feeding infant milk substitutes, rather than its structural design or intended function, creates unnecessary ambiguity. The approach of the legislative here, is quite unusual, considering that any such container can be used to store and dispense a wide range of liquids, and parents cannot be presumed to have a feeding bottle solely for infant milk substitutes.

Secondly, the definition explicitly refers to a feeding bottle as comprising of a teat and a valve, thereby treating these components as essential to the product. As a result, feeding receptacles that use alternative drinking accessories—such as spouts, straws, or sippy cup mechanisms—fall outside the ambit of the IMS Act.

Although BIS approached the Ministry of Women & Child Development in 2016 with a proposed amendment to the definition of a feeding bottle to include such drinking accessories within the scope of the IMS Act, no legislative changes have been implemented as of August 2025.

2. Indian Standard IS 14625:2015

The Indian Standard IS 14625:2015 governs the technical, material, and safety requirements for plastic feeding bottles, mandating BIS certification for compliance.[9] BPA was banned under the standard after the first revision in January 2015.[10] Prior to January

[8] *Infant Milk Substitutes, Feeding Bottles and Infant Foods (Regulation of Production, Supply and Distribution) Act 1992*, Section 2(c) (India).
[9] *IS 14625:2015, Plastic Feeding Bottles – Specification*, Bureau of Indian Standards, (2015)
[10] Amendment No.1 (First Revision) to *IS 14625:2015 Plastic Feeding Bottles – Specification*, Bureau of Indian Standards, (January 2015).

2021, the standard, defined a ***"Feeding Bottle"*** as:

"A container which is capable of holding a fluid and incorporates a graduated scale suitable for visual measurement and is intended for feeding a child through a feeding teat or drinking accessory."

Interestingly, this definition took care of the deficiency in the IMS Act. The term "Drinking Accessory," defined separately, included devices like feeding spouts, straws, etc., suggesting, that sippy cups and spout bottles were within the standard's scope.

However, this definition was amended vide the Third Revision (Amendment No. 3 (January 2021))[11] to the standard, by:

- Removing "or drinking accessory" from Clause 3.3.1 and Clause 3.4.
- Replacing "Plastics Feeding Bottle" with "Feeding bottle and its components excluding hood" in the scope and Table 1.

The revised definition now reads:

"Feeding Bottle — A container which is capable of holding a fluid and incorporates a graduated scale suitable for visual measurement and is intended for feeding a child through a feeding teat."

This change explicitly excludes drinking accessories from the scope of mandatory BIS certification, limiting regulatory oversight to bottles fitted with teats. Although teats are now governed under a separate notified standard (IS 3565: 2018)[12], the present classification, while not specifying the purpose of use, follows a similar approach as the IMS Act by recognising only bottles with teats as feeding bottles.

D. STANCE OF THE AUTHORITY

The BIS banned the use of BPA in plastic feeding bottles through the First Revision of IS

[11] Amendment No.3 (Third Revision) to *IS 14625:2015 Plastic Feeding Bottles – Specification*, Bureau of Indian Standards, (January 2021).
[12] *IS 3565: 2018 Teats for Feeding Bottles – Specification (Reaffirmed 2024),* Bureau of Indian Standards, (July 2018).

14625 in 2015, acknowledging the serious health risks posed by BPA. The revision noted as follows:

"These considerations led the committee to formulate a specification for plastics feeding bottles in 1999. This standard covered polycarbonate (PC), polypropylene (PP) and polyethersulfone (PES) as raw material for manufacturing plastics feeding bottles owing to their excellent transparency and sterilisability. Bisphenol A, having chemical formula $(CH_3)_2C(C_6H_4OH)_2$ [IUPAC name: 4,4'-(propane-2,2-diyl) diphenol], is a building block monomer for polycarbonate resin that in turn is used to manufacture infant feeding bottles. It is used to make them clear and nearly shatter-proof. Recently through studies, serious concerns have been raised about the polycarbonate type of plastic bottles because they contain Bisphenol A (BPA) which has serious health concerns even in very low dosages. It has been reported that BPA-containing plastic feeding bottles leached high levels of Bisphenol A, which is harmful for infants.

Accordingly, many jurisdictions—including the United States, the European Union, Canada, Australia, Brazil, Malaysia, and China—have prohibited the use of BPA in infant feeding bottles." [13]

This extract establishes that BIS is well aware of the risks associated with BPA and the universally-recognized importance of regulating its use. How can such a clear understanding of the risks fail to translate into comprehensive regulation—especially when the health and safety of infants are at stake?

Another relevant document to consider is a letter dated 21.09.2016 from Mr. T.B. Narayanan, the then Deputy Director General (Standardisation), BIS, issued in response to a query raised by the Programme Director of Toxic Links concerning the regulation of sippy cups. The letter stated:

"With regard to standard on Baby Sippy Cups, it is informed that IS 14625, in line with the definition of 'feeding bottles' given in the IMS Act, presently does not cover other drinking accessories like cup, spout and straw. Hence, we have already taken up with Food & Nutrition

[13] *IS 14625:2015,* Bureau of Indian Standards (n 10).

Board, Ministry of Women & Child Development with a request to amend the definition of 'feeding bottle' in the IMS Act as follows:

'any bottle or receptacle used for the purpose of feeding infant milk substitutes through a teat or drinking accessory attached or capable of being attached to such bottle or receptacle.'" [14]

It is evident from this statement that sippy cups were not considered within the scope of IS 14625:2015. As no amendments have been made to the IMS Act since then, sippy cups continue to fall outside any regulation prohibiting the use of BPA.

Furthermore, the Third Revision[15] of IS 14625:2015 omitted any reference to drinking accessories, thus, closing any room for interpretive inclusion.

While the proposed definition sought to address the issue of drinking accessories, it continued to tie the scope to the purpose of feeding *"infant milk substitutes,"* thereby retaining the core limitation found in the original definition.

E. COMPARABLE LEGISLATIONS FROM FOREIGN JURISDICTIONS

Several foreign jurisdictions provide useful comparative insights into the regulation of BPA in infant feeding products. The following legislations are particularly significant since the BIS, while drafting the first revision of IS 14625:2015 has noted, *that it has derived considerable assistance* [16]from these legislations.

1. United States of America

The Food and Drug Administration amended 21 CFR § 177.1580 (Polycarbonate Resins)[17] on 17 July 2012 to expressly prohibit the use of polycarbonate resins in infant feeding bottles and spill-proof cups (sippy cups). The regulation treats polycarbonate resins as indirect food contact materials but, through Section (d), prohibits their use in bottles and sippy cups, including closures and lids. While the term *"feeding bottle"* is defined implicitly as a container for infant

[14] TB Narayanan, *Reply to Programme Director, Toxics Link* (21 September 2016) http://toxicslink.org/wp-content/uploads/2022/08/Bureau-of-Indian-standards.pdf accessed 29 August 2025.
[15] *IS 14625:2015,* Bureau of Indian Standards (n 11).
[16] *IS 14625:2015,* Bureau of Indian Standards (n 10).
[17] *21 CFR § 177.1580 Polycarbonate Resins*, 77 Fed Reg 41899 (17 July 2012) (US).

feeding liquids, sippy cups are expressly covered as spill-proof training cups designed for toddlers**.**

2. Malaysia

Malaysia has adopted the MS 735:2012: Plastics Feeding Bottles – Specification (third revision approved on 27 June 2012 and reaffirmed in 2019)[18]. The standard defines a *"feed bottle"* as a container for storing milk or other liquids for infants and children, comprising a bottle, lid, teat, and teat cover. Importantly, the scope extends to *"containers of other forms made intentionally to be used in the same manner,"* thereby covering not only feeding bottles but also sippy cups, drinking cups, spouts, and straws. A "teat" is further defined as a substitute nipple that, when attached to a container holding fluid, enables a baby to suck and obtain the liquid**.**

3. European Union

The European Committee for Standardization (CEN) introduced two harmonised standards in 2004. EN 14350-1:2004 (General and Mechanical Requirements for Drinking Equipment)[19], approved on 30 April 2004 (later superseded by EN 14350:2020), applied to all children's drinking equipment, including reusable feeding teats, drinking accessories, containers, and drinking cups, as well as single-use bottles, teats, bags, and accessories. The definition of *"feeding bottle"* covered both reusable and single-use containers, and the standard explicitly included drinking cups and accessories, thereby encompassing sippy cups and related products**.**

Its companion, EN 14350-2:2004[20] (Chemical Requirements and Tests), approved on 17 August 2004 (also superseded by EN 14350:2020), established chemical safety and migration limits for the same set of products, ensuring that containers, cups, teats, and accessories all fell within the regulatory scope**.**[15]

A comparative reading of these legislations reveals a clear regulatory approach across jurisdictions: any container designed for feeding infants and young children is subject to

[18] Department of Standards Malaysia, *MS 735:2012 Plastics Feeding Bottles – Specification* (3rd revision, approved June 2012, reaffirmed 2019).
[19] European Committee for Standardization, *EN 14350-1:2004 Child Use and Care Articles – Drinking Equipment for Children – General and Mechanical Requirements and Tests* (approved April 2004, superseded by *EN 14350:2020*)
[20] European Committee for Standardization, *EN 14350-2:2004 Child Use and Care Articles – Drinking Equipment for Children – Chemical Requirements and Tests* (approved August 2004, superseded by *EN 14350:2020*).

regulation, irrespective of its form or delivery mechanism. This includes conventional bottles, sippy cups, spill-proof cups, drinking accessories, spouts, and straws. Such comprehensiveness prevents manufacturers from exploiting ambiguities and ensures that consumers receive uniform protection.

The Indian position, however, diverges sharply. IMS Act links the regulation of feeding bottles to their use with infant milk substitutes, thereby introducing a conceptual dependence between container and substance that is absent in foreign frameworks. Further, while the BIS standard initially adopted a progressive stance by banning BPA in feeding bottles, its dependence on the definition of the IMS Act and the subsequent limitation of its scope by excluding drinking accessories such as sippy cups, spouts, and straws, has created this lacunae.

This restrictive approach raises a fundamental concern: why should the regulation of bottles be contingent on their association with infant milk substitutes, and why should accessories that are functionally equivalent in use be excluded? The contrast with holistic foreign precedents exposes a regulatory gap within the Indian framework that risks undermining infant safety.

F. A NEW DRAFT STANDARD (2023)

The Bureau of Indian Standards (BIS) issued a Draft Indian Standard titled "Plastic Feeding and Drinking Containers, Accessories and Cutleries for Infant and Child Use – Specification" for stakeholder consultation, aimed at establishing safety requirements and testing protocols for a wider range of feeding and drinking products intended for infants and young children. The draft was published on 17.08.2023 and was open for public comments until 16.10.2023.[21]

Note: This standard did not apply to infant feeding bottles and teats, which are already regulated under IS 14625 and IS 3565 respectively.

Covered Product Categories

The draft standard included images and descriptions of commonly used product designs, and classified items into three categories:

[21] GPC - Global Product Compliance, *New Indian Draft Standard for Plastic Feeding and Drinking Containers for Children* https://gpcgateway.com/common/news_details/MTA3OQ/Nw/SW5kaWE accessed 29 August 2025.

1. **Containers**: Bowls, drinking tumblers/cups/mugs, double-wall insulated sippy cups, drinking glasses, containers with breast pumps, fresh fruit feeders, 360-degree magic cups, medicine feeders, plates, spout cups, sippy spout bottles, sippy straw bottles, water bottles.

2. **Accessories**: Spoons, straws, spouts, pipes, air vent systems, handles, locking rings, sealing disks, protecting caps, breast shields, valves, slings.

3. **Cutlery**: Spoons, forks.

This draft was another attempt by the BIS to address the existing gap by covering products that are excluded under IS 14625:2015, and by adopting a more inclusive approach. Although the exact definition proposed in the draft standard could not be accessed—due to the unavailability of the document at the time of writing—the title of the draft alone indicates BIS's intent to broaden the regulatory framework to encompass a wider range of infant feeding products.

However as of August 2025, the draft standard has not been formally notified. Furthermore, the complete text of the draft—originally accessible on the official BIS website—has since been taken down, and despite diligent efforts, the author has been unable to retrieve a credible or full version of the same from any public source.

This lack of transparency, coupled with the prolonged inaction on the proposed amendments to the IMS Act and IS 14625:2015, highlights a persistent regulatory vacuum.

G. PRESENT STATUS AND CONCLUDING REMARKS

This Article makes an attempt to highlight the inconsistent regulation of infant feeding products in India, with a particular focus on the exclusion of sippy cups, spout bottles, and similar containers from the scope of the IMS Act and IS 14625:2015. These products—irrespective of their external design or nomenclature—are used in comparable contexts, come into direct contact with consumables, and are routinely placed in infants' mouths.

The core issue stems from the restrictive definition of *"feeding bottle"* in the IMS Act, which confine regulation to containers with teats used for infant milk substitutes, thereby excluding sippy cups and spout bottles despite their identical function in infant feeding. Equally troubling is the persistent inaction of the authorities on addressing this gap, even though a 2023 draft

standard proposed broader coverage for infant feeding products, yet remains unnotified as of August 2025.

While global jurisdictions have not only banned BPA in infant feeding products but are increasingly extending BPA restrictions to adult food contact materials, India's regulatory stagnation on this critical public health issue is deeply concerning. At what point does this delay, despite mounting scientific evidence and international precedent, cross the threshold from mere inaction to actionable negligence on the part of the authorities tasked with safeguarding public health?

This gap becomes evident when one considers how easily a manufacturer can escape the regulatory scope of BIS in such an essential product. All one has to do is produce a plastic feeding bottle without a teat and instead market it with detachable accessories such as spouts or sippers. In this way, BPA-containing products continue to circulate in the market without technically falling within the notified standards.

While many sellers now claim to offer BPA-free sippy and spout bottles, consumers are urged to verify such claims carefully. A simple written request or email to the manufacturer asking for independent BPA testing reports, relevant certifications, or safety documentation can provide a certain level of assurance. Nevertheless, the safest course of action remains purchasing glass or steel feeding bottles and only ISI-marked plastic feeding bottles, as these conform to Indian Standards and offer enforceable accountability.