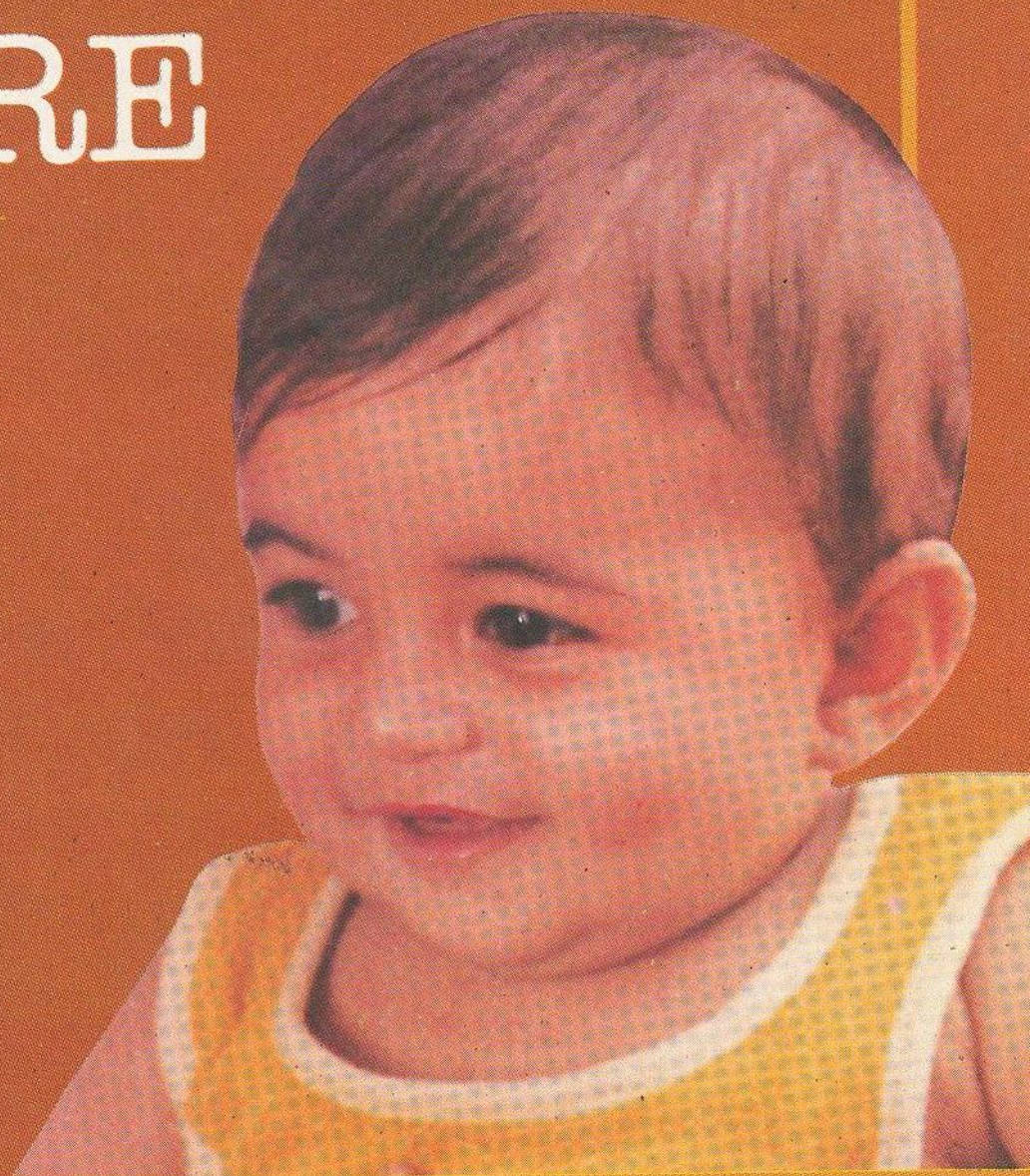


BIS & INFANT CARE

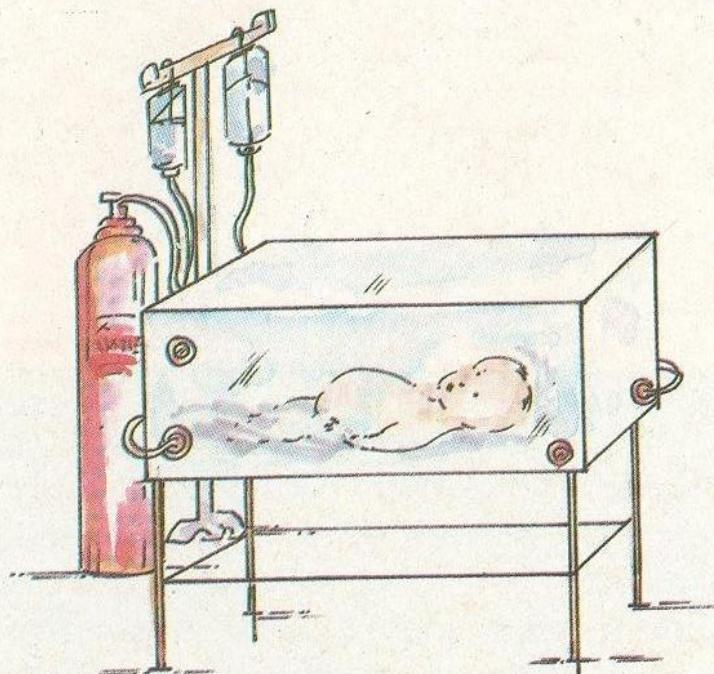


BUREAU OF INDIAN STANDARDS

BIS AND INFANT CARE

The delicate new born baby needs utmost care for its proper growth. Ample nutrition, hygiene and safe and comfortable infant usables ensure its sound development. Quality assurance in products meant for infants, therefore, bears its defined importance. Realizing this, the Bureau of Indian Standards has formulated standards on products meant for infants. Some of these are also covered under the Bureau of Indian Standards Certification Marks Scheme. The products on which standards have been formulated include infant foods and infant formulae, baby toilet soap, baby incubators, baby weighing machines, skin powder for infants, baby dropside hospital cots and safe toys for infants.

GUIDANCE THROUGH INDIAN STANDARDS TREATMENT OF PREMATURE BORN BABIES



Babies born premature need incubators for their safe keeping and treatment. An incubator is a closed chamber, designed and constructed to have built-in means of heating and humidifying the air and has provision for supply of oxygen to the chamber. An Indian Standard Specification IS 3120 : 1978 'Baby incubators' has been formulated covering the performance, safety and general requirements for electrically heated incubators for prematurely born babies with a view to provide a comfortable, safe and convenient method of maintaining the babies at a temperature and humidity decided by medical authorities. The specification keeps in view the latest technological developments in manufacturing electrically heated incubators and includes characteristics of performance tests for thermostats and insulation resistance which are critical requirements and must be properly monitored. Provision has been made in the standard for safety and satisfactory design of the apparatus while a good deal of latitude has been allowed to the incubator manufacturer to introduce innovations and refinements.

SAFE PLACEMENT OF INFANTS



Dropside baby hospital cots are utilized in the hospitals for placing the infant safely and hence should be both sturdy and comfortable. An Indian Standard Specification IS 5337 : 1969 Cot, dropside, baby, hospital prescribes different characteristics for dropside baby cots. The characteristics include requirements for dimensions, material, design, quality of mattress and finish. The tests to be carried out include impact test, mattress test, adhesion test and performance test.

INFANT NUTRITION



Feeding Requirement

Mother's milk ideally fulfils the entire requirement for growth of infant. Additionally it provides unique bio-immune factors for protecting their health. Reliance on alternate sources of nutrition is however necessary when breast feeding is not possible. Infant foods and infant formulae are intended for partial or total replacement of breast milk. To safeguard their health, it is imperative that these alternative foods are properly formulated so that nutritional requirements for optimal growth of infants are adequately met and physiological stress on the developing organ/enzymic system of the infant is kept at minimum. Indian Standard Specifications IS 1547 : 1985 Infant food and IS 11156 : 1985 Infant formulae prescribe the requirements for characteristics specified and their methods of sampling and test. To provide nutrients ordinarily found in breast milk and ensure that the infant foods and infant formulae are suitable as the sole source of nutrients for infants, these standards stipulate the levels of milk protein, milk fat and Vitamins A and D. They also specify the minimum levels of B complex vitamins, Vitamins C and K and minerals like copper, iodine, manganese and zinc which may be added to the infant formulae and foods. If manufactured in accordance with the requirements laid down in IS 1547 : 1985 and IS 11156 : 1985 the availability of wholesome milk food and milk formulae, respectively, for consumption by the needy infant is ensured. The infant food and infant formulae are available with the Standard Mark, the familiar ISI Mark.

Energy and Satiety Requirements

The sole source of nutrition for an infant initially is milk, either breast milk or powder milk marketed as infant milk or infant formulae. However, after a few months, the infant has to be given solid foods in addition to milk. Milk cereal based weaning foods are mainly intended to 'accustom' the infant's digestive tract to solid foods. Nutritionally, this category of foods serve as an important source of calories to meet the energy requirements due to increased physical activity. Beginning with the introduction of cereals from the age of four months, the intake is slowly increased so that by eight months of age and onwards nearly half of the total intake is from milk and remaining from cereals and a variety of other foods. With such a feeding regimen, milk almost completely meets the feeding requirement, while cereals and/or other foods meet the energy and satiety requirements of the infant.

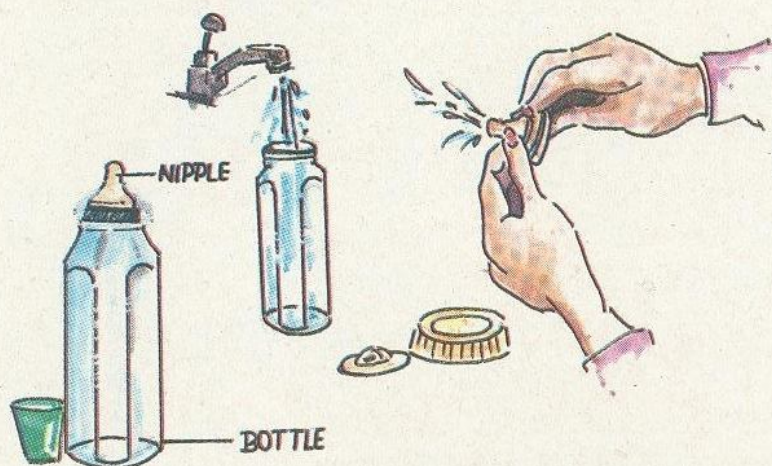
Milk cereal based weaning foods are obtained from a variety of cereals; vegetables; oils and proteins; milk solids; carbohydrates, such as sucrose; dextrose, dextrins, maltose and lactose; iron and calcium salts; phosphates and citrates; other approved nutritionally important minerals and vitamins. An Indian Standard Specification IS 1656 : 1985 Milk Cereal Based Weaning Foods has been formulated which prescribes the requirements and methods of sampling and test for Milk cereal based weaning foods intended for feeding infants at the weaning stage.

An Indian Standard Specification IS 6387 : 1971 Vegetable Protein Infant Food with Milk has been formulated to promote the use of vegetable proteins admixed with milk powder which can be used for substituting mother's milk. Vegetable protein infant food with milk are prepared by drying an emulsion of vegetable proteins, vegetable oil or fat and milk with added carbohydrates or by blending the components. The vegetable proteins may be derived from cereals, pulses or legumes singly or in a combination thereof.

Mandatory Certification

Through a Gazette notification amending the *Prevention of Food Adulteration Rules, 1955*, Government of India has brought infant milk food, infant formulae and milk cereal based weaning food under Compulsory Certification of Bureau of Indian Standards. Thereby no person shall manufacture, sell, store or exhibit for sale an infant milk food, infant formulae and milk cereal based weaning food except under Bureau of Indian Standards Certification Mark.

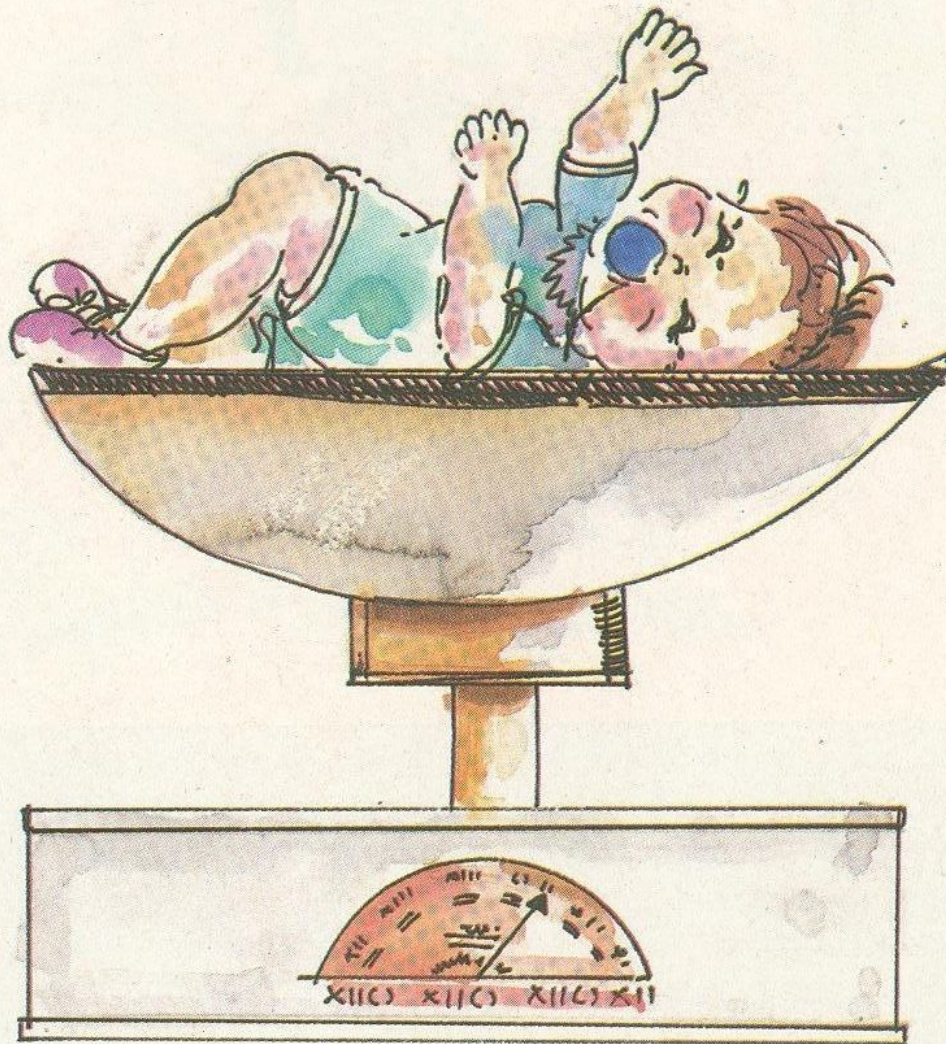
FEEDING DEVICES



Feeding bottles are used almost universally for feeding infants. They need to be designed so as to permit easy cleaning and sterilization and to which rubber teats can be easily slipped on or secured with a metallic or plastic screw closure for providing a leakproof grip. An Indian Standard Specification IS 5168 : 1969 Glass Feeding Bottles has been formulated which prescribes the requirements and methods of sampling and test for glass feeding bottles. The requirements to be tested include pattern, material and workmanship, capacity, dimensions, finish, scale and graduations, limit of alkalinity, and thermal shock resistance.

Rubber teat is a device on a feeding bottle for intake of milk by the infant. It is essential that the teat should not contain harmful ingredients which may go into the solution and contaminate the milk or liquid baby food. Further, these often impart undesirable odour, taste or discolouration. These may cause irritation to the feeding baby on becoming hard at times. Taking into consideration the human aspect involved, an Indian Standard Specification IS 3565 : 1966 Rubber Teats for Feeding Bottles was formulated in order to make available the teats that may be harmless and agreeable to the baby. This standard prescribes physical and chemical requirements for teats. Physical requirements include those for material of teats, workmanship and finish while chemical tests include acetone extract, free sulphur in acetone extract, change in physical properties, properties of water extract and pH of water extract retention test.

MONITORING THE GROWTH OF INFANTS



In the initial months of an infant's development, paediatricians utilize weighing machines to monitor growth. Controlled increase in a baby's weight indicates its proper growth. An Indian Standard Specification IS 2489 : 1963 Baby Weighing Machines has been formulated to cover chiefly the technical provisions relating to baby weighing machines. As per the standard, the baby weighing machine is a machine with a pan to place the baby to be weighed, the capacity of which has been laid down as 10, 15 or 20 kg. The weight corresponding to the interval between two graduation marks shall not exceed 50 g as prescribed in the standard, thereby giving the machine a capability of detecting even a small change in the baby's weight.

GENERAL PHYSICAL HYGIENE



A baby's skin is much thinner and less cornified than that of an adult. It is highly susceptible to irritation and bacterial attack. If superficial layers of the epidermis are damaged for any reason, various types of skin disorders may develop. Therefore, due care must be taken during the manufacture of products utilized for the general physical hygiene of infants in respect of toxicity and dermatological considerations.

Cleanliness

Baby toilet soap is an important item for keeping baby clean. An Indian Standard Specification IS 10523 : 1983 Baby Toilet Soap has been formulated to achieve dermatological safety of toilet soaps used for babies, the choice and selection of appropriate quality and quantity of different raw materials being very important. Although the characteristics for baby toilet soaps are basically similar to those meant for adults, the requirements for these characteristics are different. Unlike the normal toilet soap, the use of rosin has been prohibited in baby soap as it may lead to irritation of the skin on account of its unsaturated nature. On a similar consideration, the standard prescribes a higher limit for total fatty matter, lower limits for free caustic and carbonated alkali and additional limits for heavy metals, namely nickel, copper and iron.



Comfort

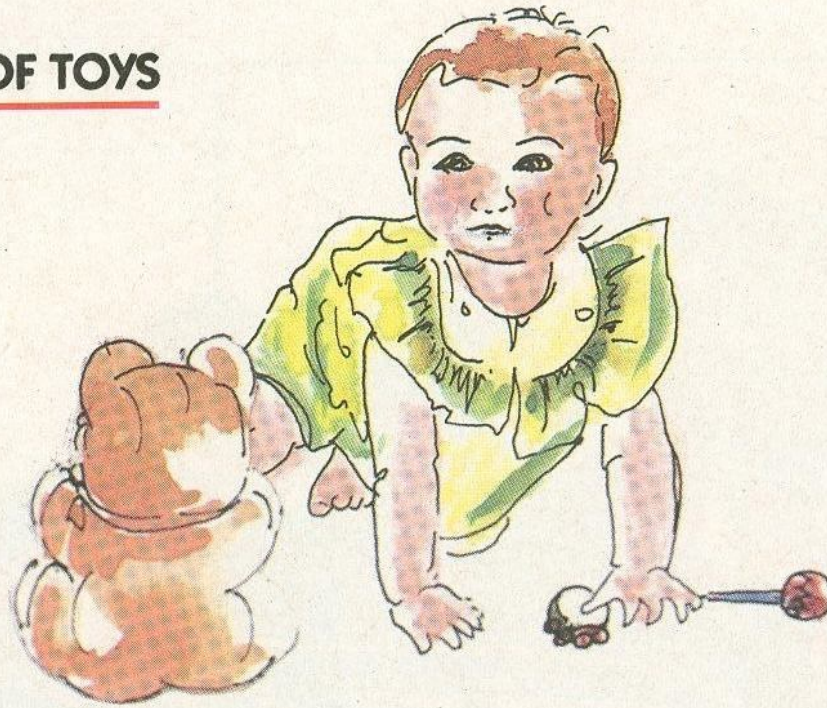
Baby skin powders are intended to make infant feel comfortable and to help prevent skin rashes that arise from or are aggravated by excess moisture and dust. An Indian Standard Specification IS 5339 : 1978 Skin Powder for Infants has been formulated prescribing the requirements for the characteristics specified and the methods of sampling and test. In composition skin powders for infants do not differ widely from those intended for adults. One obvious difference is that infant powders are usually lightly perfumed or not perfumed at all. This is to reduce the risk of sensitization and irritation. Another significant difference is that baby powders are free from boric acid. It must be noted that inadvertent inhalation of these powders is to be avoided. Skin powders for infants should not be a cause of bacteriological and fungal contamination and hence the standard prescribes that it shall be the responsibility of manufacturer for dermatological safety of the formulation before releasing it for sale. As skin powders for infants are widely used now, caution is necessary not only in the selection of the ingredients but also in their packing.

SELECTION OF CLOTHING



An Indian Standard Specification IS 10015 (Part 4) : 1982 Size Designation of Clothes : Part 4 Infants Outwear Garments has been formulated with the primary aim of establishing a size designation system that indicates in a simple, direct and meaningful manner the body size of the infant that a garment is intended to fit. The system given in the specification facilitates the choice of garments that fit, provided that the shape of the infant's body as indicated by the appropriate dimensions has been accurately determined. The size designation system is based on body and not garment measurements.

SAFETY OF TOYS



Toys are not mere playthings but also instruments for the development of a baby's physical and mental faculties and talent. However, these may become a cause of potential hazard to the baby if they are not manufactured keeping its safety in view or handled or selected without due care. Toys may have sharp edges and corners or may have been sprayed with toxic paint. Some of them may be so small that they can be easily swallowed by the baby. Under these circumstances, a consumer may feel totally helpless about quality and safety aspect of toys. For the purpose of guidance in this regard, Bureau of Indian Standards has brought out a comprehensive Indian Standard Specification IS 9873 : 1981 Safety Requirement of Toys (which covers in three parts, mechanical and physical properties of toys and their toxicological and flammability requirements). A Guide IS 9849 : 1981 Selection of Toys for different age groups of children has also been published.

Your views may be forwarded to :

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CAD/BISAIC/01/0392



Photographs
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Design & Concept
KARTIKA 653045

Printed at
M/s Tara Art Press

