

SECTION: Food Delivery**SUBJECT: Guidelines for Storing Formula Safely**

Local agencies are not allowed to store formula products at their agencies or issue formula to participants. These formula storage guidelines are intended to serve as a reference for staff if ever needed.

General Storage Recommendations for UNOPENED products:***General Guidelines***

- The storage room temperature should be above 32 degrees Fahrenheit and below 85 degrees Fahrenheit. Temperatures outside the recommended limits can affect product quality. An "ideal" temperature range is 65-75 degrees Fahrenheit. Liquid based formulas are more susceptible to alterations in quality from temperature than powdered formula.
- The product should not be used after the expiration date.
- The product should not be stored near heaters, vents, air-conditioners, direct sunlight or areas where temperatures in the immediate area may differ from the room temperature.
- Frequent exposures to the lower and/or higher temperature accepted ranges over time may affect product quality.

Temperatures Below Freezing

When enteral products are subjected to low temperatures where freezing of the formula occurs, a number of changes occur during the thawing processes which are undesirable:

- Loss of emulsion stability (fat separates to the product surface).
- Loss of protein stability (protein can appear curdled and/or spoiled).
- Separation of sparingly soluble minerals/nutrients and/or the formation of relatively insoluble nutrient complexes.

These changes generally only affect aesthetic appearance, but the loss of product homogeneity can also affect nutrient deliveries when attempts are made to feed these products after components have separated. In addition, freezing can also damage the product packaging, resulting in loss of packaging integrity. Plastics may become brittle in freezing temperatures.

Any product that was subjected to freezing, even if temporary, should not be used. Any product suspected of having been subjected to freezing temperatures, where freezing and thawing could have occurred, should not be used.

High Temperatures

High temperature exposure for long periods may cause nutrient degradation, browning and physical change. If a product is exposed to high temperature:

- Check the look of the product's consistency and packaging.
- Do not use if it looks curdled, discolored, or has a different smell.
- If you are not sure what a product should look like or whether it is **safe** to use, contact someone who knows or call the formula company. Be very specific with descriptions of appearance and storage conditions. Do not use the formula until you can get further information.

Product Sterility/High Risk Populations

Unopened powdered infant formulas are not manufactured as commercially sterile. Liquid concentrate and ready to feed are classified as "commercially sterile". This factor is important to consider in populations that may have severe immune dysfunction or high risk of infections.

FDA recommends that powdered infant formulas not be used in hospital settings unless unavoidable. While FDA's recommendations did not include discharge-planning issues in high-risk infants, some health care providers may order ready-to-feed or liquid concentrate formula for home use in certain high-risk infants as a precaution. In addition, caregivers of high-risk infants may be given more stringent formula preparation instructions than standard home setting formula preparation procedures. WIC staff should be supportive of these families and work with them to provide a smooth transition home.

General Storage Recommendations for **OPENED** products:

General Guidelines

Opened, commercial formula for infants should be stored according to the manufacturer's instructions on the product label.* **If proper control of storage for opened containers is not possible, unused portions of formula for infants should be discarded.

Powder-opened (not reconstituted):

- Generally, opened infant formula powder can be stored in the original container for up to four weeks.**
- The container should be labeled with the date it was opened.
- The container should be covered and kept in a cool, dry area (not a refrigerator).
- Opened powder stored more than four weeks may become rancid and suffer excessive loss of Vitamin A and C.
- Formula subjected to conditions outside of manufacturers' recommendations should be discarded. **

Liquid-opened (*concentrate- not reconstituted, ready to feed*)

- Opened, commercial liquid formula can be stored in the original container. The container should be covered and can be stored in the refrigerator and used within 24-48 hours* **. Liquid formula held for longer periods of time is at risk for loss of Vitamin C and some B vitamins, and bacterial growth.
- Refrigerator temperature range should be between **35-40 degrees Fahrenheit**.
- Formula removed from the refrigerator and left unrefrigerated for **greater than one hour** should be discarded. **

Prepared Formula Storage (*from powder or liquid concentrate*):

- Prepared formula should be kept in the refrigerator and used within 24-48 hrs.*
- Formula remaining in the bottle for more than one hour after initiating feeding should be discarded.**
- Formula removed from the refrigerator and left unrefrigerated for **greater than one hour** should be discarded. **
- Refrigerator temperature range should be between **35-40 degrees Fahrenheit**.

* Most semi-elemental or elemental products should be discarded after 24 hrs. Most health care facilities discard any formula after 24 hrs due to the nature of the setting (high-risk patients). ** High-risk infants may require stricter guidelines than standard recommendations.

Expired, Recalled, or Damaged Products

Ensuring Proper Disposal

Expired, recalled, or damaged products must be discarded in such a way as to prevent human consumption. In the event that the product is being returned to the manufacturer as part of a recall/product analysis, the product must be temporarily stored in such a way as to prevent human consumption until the product is returned to the manufacturer. In the interim, a label should be placed directly on the product in a visible location stating that the can(s)/case should not be consumed because it is being recalled/is damaged.

Public Health Threat

In the event that a product is being recalled or is damaged as a result of an infectious disease or known/suspected bioterrorism, immediately consult with local/state health department officials for guidance on proper disposal of the product.

Formula Handling, Preparation and Storage for Parents of WIC Infants

For specific information for parents of infants, please see the link below regarding infant formula storage and preparation:

http://www.nal.usda.gov/wicworks/Topics/FG/Chapter4_InfantFormulaFeeding.pdf