

# UPDATED GUIDELINES FOR Safe Formula Preparation

## WHY IS THIS IMPORTANT?



A 2025 study found that current formula preparation guidelines fail to protect against *Cronobacter* spp. (Scan QR code for more info -->)

### POWDERED INFANT FORMULA IS NOT STERILE.

Mixing it with boiling water at the **right** temperature kills the bacteria in the powder, making it safe for your baby to consume.

#### PATHOGENIC BACTERIA

Powdered formula can be contaminated with *Cronobacter*, *E. sakazakii*, *Salmonella*, lead, and other harmful bacteria.

#### HEALTH CONSEQUENCES

Multiplication of *E. sakazakii* can cause devastating sepsis, particularly in the first 2 months of life. There are high rates of meningitis, brain abscesses, and necrotizing enterocolitis, with an overall mortality from 33% to 80%.



#### THE PERFECT ENVIRONMENT

Milk products are excellent media for bacterial proliferation.

*Cronobacter* contamination can cause septicemia, meningitis and death. Fortunately, cases are rare, with an estimated 18 cases occurring annually in the U.S.

**“It’s important to protect our most vulnerable infants...this is an instance where caregivers have agency to make sure formula is safe.”**

-Abigail Snyder, Ph.D.

## WHO IS AT RISK?

**BABIES 2 MONTHS OF AGE & UNDER**

**IMMUNOCOMPROMISED BABIES**

**PREMATURE BABIES**



## TIPS

## DIRECTIONS

### WASH HANDS, BOTTLES, & ACCESSORIES

In addition to the powdered formula, pathogens can also be found in the household and bottles can become contaminated during preparation. To minimize exposure, wash hands thoroughly with hot soapy water before handling any bottles or accessories. Use clean, sanitized bottles and parts, and clean the surface of your working area prior to handling formula or bottles.

### BOIL WATER: HEAT TO 165°F (73.8 °C)

Because altitude can affect the boiling point, your water may or may not be boiling at this temperature. To ensure accuracy of water temperature, use a thermometer or pre-programmed kettle to heat your water.

### PREP BOTTLES AHEAD OF TIME

Preparing a whole day's worth of bottles in advance makes this process much simpler for many families.



### THE RIGHT TOOLS CAN HELP!

A digital thermometer is a simple and inexpensive way to ensure that your water temperature is just right. You may find that using a tea kettle with pre-determined temperature buttons makes things easier.



- You can use a handheld electric formula mixer in lieu of shaking the bottles to mix (resulting in fewer clumps).
- You could also mix a big batch of formula in a pitcher, then pour bottles from that (although this takes longer to cool).
- Use a funnel or flange to fill each bottle with boiling water more precisely and with less spillage.

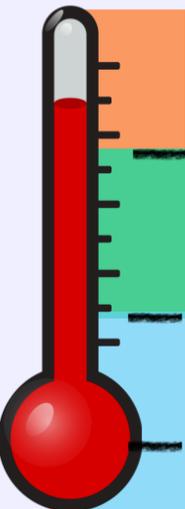
### LABEL BOTTLES CLEARLY

Be sure to label the bottles before storing in the fridge, so that the shelf life is readily apparent. Formula should be stored at 39°F (4°C), and can be refrigerated for up to 24 hours after preparation.

### ALTERNATIVE OPTIONS

Ready-made liquid formula bottles are a sterile option that do not require any boiling or special preparation. These are a great alternative, though they do cost more than powdered infant formula.

Breastmilk is an excellent sterile feeding option for babies. Donor milk may be available if mother's milk is not an option for your family.



**Caution:** Avoid temperatures >165°F (73.8 °C), as water that is too hot can degrade nutrients in the formula.

**165°F (73.8 °C) - RECOMMENDED TEMP TO HEAT WATER BEFORE MIXING WITH FORMULA**

**158°F (70°C) - MINIMUM TEMPERATURE TO KILL BACTERIA**

**98°F-100°F (36°C-37°C) - SAFE FOR BABY TO DRINK**

### MIX FOR 1 MINUTE

Mix in powdered formula, stirring carefully until combined, for at least 1 minute.

### COOL

After mixing, bottles should be immediately placed in an ice bath or placed under cold running water to cool.



### FEED TO BABY

Prepared formula should be cooled to between 98-100°F (36°C-37°C) before being given to Baby.

### DISPOSE

Discard any remaining formula in the bottle within the hour.