

Making up bottles of infant formula from hot taps and baby kettles

Many kitchens are now fitted with hot taps where either 'boiling' or cold water is dispensed directly. Current advice to leave water to cool for no more than 30 minutes is based on 1 litre of water being boiled and left in the kettle, with the aim that the water is still at a temperature of 70°C or above when the powdered infant formula is added. If smaller volumes of water are used cooling times will be significantly shorter.

Using a hot tap water will be dispensed directly into a bottle if being used for making up infant formula. We have tested temperatures using one type of hot tap in a domestic kitchen as a guide for those supporting families who make up formula this way.

The table below shows different volumes of water where the temperature was tested after the water had been added to the bottle and after 5, 10 or 15 minutes. An 8oz (240ml) baby bottle was used and water added in ounces as recommended for making up feeds for different ages of babies. The temperatures were all taken twice, and the mean temperature has been provided. We put the lid on the bottle after adding the water and it is likely that leaving the bottle uncovered will impact on the temperature.

Table 1: Temperature after water added to bottles in different amounts.

Amount of water	Temperature immediately after water added °C	Temperature 5 minutes after water added °C	Temperature 10 minutes after water added °C	Temperature 15 minutes after water added °C
2oz (60ml)	79.1	60.7		
3oz (90ml)	84.6	69.0		
4oz (120ml)	88.5	72.0	65.5	
5oz (150ml)	89.5	74.3	69.8	
6oz (180ml)	90.0	77.7	70.5	66.0
7oz (210ml)	90.4	78.1	73.8	68.3
8oz (240ml)	91.2	80.0	75.0	70.2

These are just a guide: it is likely that other hot taps might provide water at different temperatures and the time taken to fill the bottle to the correct level might vary. Care is needed when filling the bottles not to scald, particularly if you bend down to the right level to see the bottle markings to add the correct amount of water.

Our conclusion from this is that if using a hot tap to fill the bottle that the powdered infant formula should probably be added:

- Immediately if volumes of 2-3oz (60-90ml) are being made up
- After no more than 5 minutes for volumes of 4oz-5oz (120ml-180ml)
- After no more than 10 minutes for volumes 6oz-8oz (210ml-240ml)



Baby kettles

Baby kettles are now available on the market which claim to keep water at the correct temperature after being boiled to allow families to make up infant formula without the need for cooling before the powder is added. These kettles appear to keep water at a temperature of 70°C for 3 hours. This is no longer than 500ml of boiled water can be kept in a thermos flask and still remain above 70°C.

There is a potential risk that the water in these kettles may be repeatedly boiled (e.g. set to re-boil after 3 hours) to maintain the temperature, concentrating elements in the water. Fresh water should always be used in the kettle. The water is also likely to cool below 70°C being poured into the bottle and is therefore likely to be less than 70°C when the powder is added. We have not tested these kettles but suggest caution if families are using these to make up infant formula.

We welcome any other information about these kettles and experiences of using them.