Water Temperature for Tea: A Brewing Guide

From the teas.co.uk wiki

> **Tea brewing temperature, in summary:** Brewing temperatures: black 95-100C, green 70-80C, white 75-85C, oolong 85-95C, pu-erh varies, herbal full boil. Why each matters and what goes wrong.

Last reviewed by the teas.co.uk team in May 2026.

Water temperature for tea is non negotiable. Black tea wants 95-100°C (just boiled). Green tea wants 70-80°C (NOT boiling). White tea wants 80-90°C. Oolong wants 85-95°C. Herbal wants just boiled. Get it wrong and you're either under extracting (weak tea) or scalding the leaves (bitter tea). The kettle then pour habit works for black; everything else needs careful temperature management.

Why temperature matters

Tea compounds extract at different temperatures:

- **Aromatic volatiles** extract at any temperature; lost faster at high heat.
- **Caffeine** extracts at 70°C+.
- **Catechins (EGCG, etc.)** extract at 70°C+.
- **Tannins** extract aggressively at 90°C+. The bitterness compounds.
- **L theanine and amino acids** extract at lower temperatures (60-80°C is best).

Different teas want different extractions. Higher temperature isn't universally better.

Temperature by tea type

Black tea: 95-100°C

Just boiled water. The full extraction range works: tannins for body, caffeine for kick, polyphenols for character. The British kettle approach is correct.

Green tea: 70-80°C

NOT boiling. At 95-100°C, green tea extracts catechins fast and tannins faster, result is harshly bitter cup. At 70-80°C the catechins extract but tannins don't, and L theanine extracts well.

How to get there:

- Boil kettle, leave 2-3 minutes to cool.
- Or use 70°C setting electric kettle.
- Or pour boiled water into a cool cup first, then pour onto leaf.

Sencha specifically: 70-80°C

The premium sencha range wants careful temperature. More on sencha.

Gyokuro specifically: 50-60°C

Premium shaded green tea wants very low temperature. The amino acids extract and the umami is preserved.

Matcha: 70-80°C

Matcha is whisked, not steeped, but the water temperature still matters. Too hot scorches the powder; too cold doesn't activate it.

White tea: 80-90°C

Delicate. Avoid boiling water, it scalds the silver needle buds.

Oolong tea: 85-95°C

Range depending on style:

- Greener oolongs (Tieguanyin): 85°C.
- Roasted oolongs (Da Hong Pao): 90-95°C.

Pu erh: 95-100°C

Just boiled. The fermented character holds up.

Herbal infusions: 95-100°C

Just boiled. Herbal compounds extract best at high temperature.

Rooibos: 95-100°C

Just boiled. No bitterness concern; extract fully.

How to control temperature

Variable temperature kettle

The most precise. Set the temperature; the kettle stops there. Around £30-60 for a quality model. Worth investing if you drink green tea regularly.

Cool the boiled water

Boil kettle. Pour into cup. Check with a thermometer until it has cooled to about 80°C. Pour onto leaf. Reasonable workaround.

Pour from height

Pouring boiling water from height (15-30cm) cools it slightly during the pour. Adequate for casual approach.

Add cold water

For green tea: 80% boiling + 20% cold = around 80°C. Not precise but workable.

Thermometer

Cooking thermometer in the cup. Most accurate for occasional brewing.

Temperature for cold brewing

Cold brew tea uses cold water (4-15°C from the fridge or tap). Lower temperature means slower extraction, but over 6-8 hours full flavour develops. Very smooth, naturally sweet, no bitterness. More on cold brew.

Temperature problems

Bitter green tea

Cause: water too hot. Solution: boil kettle, wait 2-3 minutes before pouring.

Weak black tea

Cause: water too cool, or steep too short. Solution: just boiled water, longer steep.

Astringent oolong

Cause: water too hot for greener oolongs. Solution: lower to 85°C.

Flat herbal tea

Cause: water too cool, or steep too short. Solution: just boiled water, 5-7 minute steep.

Scalded white tea

Cause: boiling water on delicate buds. Solution: 80-85°C.

Temperature for milk addition

The milk first vs milk after debate has a temperature dimension:

- Milk first: milk gradually warms as tea is poured. Avoids "scalding" milk proteins.
- Milk after: tea is poured first, hot, then milk added. Tea brews at full temperature.

The Royal Society of Chemistry recommends milk first to prevent denatured milk protein. Most British people do milk after. The taste difference is minor at typical tea temperatures.

Temperature with multi infusion

Premium loose leaf is multi infused. Temperature can vary across infusions:

- First infusion: lower temperature reveals delicate top notes.
- Subsequent infusions: slightly higher temperature extracts deeper compounds.

For most home drinkers, consistent temperature is fine.

Hot drink temperature

Recommended drinking temperature is 60-65°C, hot but not scalding. Above 65°C carries some research flagged risk to oesophageal tissue with regular long term consumption.

Practical: brew at correct temperature, then let cool 1-2 minutes before drinking.

FAQ

Best temperature for green tea? 70-80°C. Never boiling.

Best temperature for black tea? 95-100°C. Just boiled.

Variable kettle worth it? Yes, if you drink green tea regularly.

How to cool water without thermometer? Boil, then wait 2 minutes for green tea, 1 minute for white/oolong.

Can you over heat tea? Yes, green and white tea become bitter at boiling temperature.

Curator's note: temperature is the underrated tea variable. Variable temperature kettle is one of the better tea improvement investments. Get green tea right at 75°C and you'll wonder why you ever drank it scalded. Lee, teas.co.uk, Tunbridge Wells.

The essentials: water temperature for tea

Tea family	Temperature	Notes
Black tea	95-100C (just-boiled)	Robust enough for full boil; under 90C reads thin
Green tea	70-80C	Let kettle cool 2-3 min after boil; full boil scorches
White tea	75-85C	Lower than green; rewards covered brew
Oolong (light)	85-90C	Greener oolongs need lower temp than darker
Oolong (dark, roasted)	95C	Yancha and roasted oolongs handle full boil
Pu-erh (sheng/raw)	85-95C	Younger sheng needs cooler than aged
Pu-erh (shou/cooked)	100C (full boil)	Mature shou loves full boil
Herbal infusions	100C (full boil)	Roots and seeds need full boil; flowers shorter

What to buy now

A variable-temperature kettle at £30 to £80 is the single biggest upgrade for any UK tea kitchen that brews more than just English Breakfast. Buttons at 70, 80, 85, 90, and 95C cover every tea family. To experience the temperature impact, brew the same quality green tea at 75C and at 95C side by side; bitterness and

aroma shift visibly. Pair with a quality gaiwan for Chinese tea and a ceramic teapot for black tea.

FROM THE CURATOR

teas · Spend less on prestige, more on freshness. A two-month-old supermarket bag still beats a three-year-old gift tin.

Temperature reading

For brewing technique by family see the how to brew black tea guide, the how to brew green tea piece, the how to brew white tea overview, and the how to brew oolong guide. For equipment see the temperature kettle piece and the teapots and infusers overview.

More from the tea wiki

- Green tea
- Black tea
- Oolong tea
- White tea
- Herbal tea
- Caffeine in tea
- How to make tea properly
- Loose leaf vs teabag

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