Ideal Water Temperatures

From the teas.co.uk wiki

> **Water temperature map, in summary:** Black tea wants 95C, green 70-80C, white 75-85C, oolong 85-95C, pu-erh full boil. The right water temperature ends bitterness and rescues mid-grade leaf.

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

Water temperature is one of the two variables that determines whether a cup of tea works or doesn't (the other is brewing time). Boiling water is appropriate for some tea families and ruinous for others; the difference between a good cup and a bitter cup often comes down to whether the water was at 70°C or 100°C. This guide is the complete family by family map: which teas need which water temperature, why, what happens if you get it wrong, and the practical equipment options for getting it right consistently.

The short version: black, herbal, rooibos, and pu erh teas use boiling water; oolong uses just off boiling; green, white, and yellow teas use cooled water (70 to 80°C); matcha uses cooled water but is whisked rather than steeped. Get this right and your cups improve immediately.

The headline temperature map

Tea family	Water temperature	How to achieve it
White tea (silver needle, white peony)	70 to 75°C	Use a temperature control kettle, or boil and check with a thermometer as it cools
Green tea (Japanese sencha, gyokuro)	70 to 75°C	Same as white tea
Green tea (Chinese dragonwell, Mao Feng, jasmine)	75 to 80°C	Slightly hotter than Japanese green
Yellow tea	75 to 80°C	Similar to Chinese green tea
Matcha (whisked)	70 to 80°C	Whisk rather than steep
Light oolong (Tieguanyin, jade)	85 to 90°C	Just under boiling
Dark oolong (Wuyi, roasted)	90 to 95°C	Almost boiling
Black tea (everyday, Assam, Ceylon)	95 to 100°C	Just boiled water

Tea family	Water temperature	How to achieve it
Black tea (Darjeeling)	90 to 95°C	Slightly cooler for delicate character
Pu erh tea	95 to 100°C	Just boiled water
Rooibos and red bush	95 to 100°C	Just boiled water; tolerates extended brewing
Herbal infusions (chamomile, peppermint, ginger, hibiscus)	95 to 100°C	Just boiled water; longer steep needed
Spiced chai blends	95 to 100°C	Just boiled water; or simmer in milk water mix

Why temperature matters: the chemistry

Different tea compounds dissolve at different rates and at different temperatures. Understanding the basic chemistry explains why the temperature recommendations exist:

- **Caffeine:** dissolves readily across all temperatures; not a temperature variable
- **L theanine:** the amino acid responsible for tea's "focused but relaxed" effect; partially destroyed by boiling water, particularly in green tea
- **Catechins (EGCG)** the green tea polyphenols; more readily extracted at high temperatures but also more bitter at high temperatures
- **Tannins:** the astringent polyphenols; extracted faster at high temperatures, producing bitterness if over extracted
- **Volatile aroma compounds:** the molecules responsible for tea aroma; some are damaged or driven off by very high temperatures
- **Theaflavins and thearubigins:** the oxidised polyphenols specific to black tea; require high temperatures for full extraction

The temperature recommendations balance these competing factors. For green and white tea, lower temperatures protect the L theanine and aroma compounds while still extracting enough character; for black tea, the theaflavins and thearubigins need full extraction so boiling water is appropriate.

What happens if you get it wrong

Boiling water on green tea: the most common mistake British drinkers make. Boiling water destroys the L theanine balance, over extracts catechins, and damages aroma compounds. The result is a bitter, astringent, flat tasting cup that's worse than the tea deserves. Many drinkers conclude "I don't like green tea" after only ever drinking it brewed at boiling water with bagged supermarket tea; they've never actually tasted what green tea is supposed to taste like.

Cool water on black tea: the opposite mistake, less common but it happens with travel kettles or temperature confused brewing. Cool water (under 90°C) doesn't extract enough character from black tea, producing a thin, weak cup. Black tea brewed at 70°C tastes nothing like proper black tea; it's the under extracted version where the cup never develops its full character.

Boiling water on white tea: similar to the green tea problem, white tea's delicate compounds are damaged by boiling water. The cup loses its characteristic delicate sweetness and gains an astringent bitter note that shouldn't be there. Use 70 to 75°C for proper white tea.

Just off boiling on Darjeeling: Darjeeling is the most temperature sensitive black tea, often called "the champagne of teas" because of its delicate muscatel character. Boiling water can flatten the distinctive character; 90 to 95°C is the better target for premium Darjeeling.

How to get the right temperature without specialist equipment

You don't need a temperature control kettle to brew good tea. The basic methods:

The boil then cool approach. Boil the kettle, then let it cool and check the temperature before pouring. There is no reliable minutes-to-degrees rule: how fast boiled water cools depends on how much water is in the kettle, the kettle itself and the room, so use a thermometer or a temperature-controlled kettle to reach these temperatures:

- **For green and white tea** 70 to 75°C
- **For Chinese green tea** 75 to 80°C
- **For oolong tea** 85 to 90°C
- **For Darjeeling** 90 to 95°C
- **For everyday black tea, herbal, pu erh, rooibos:** pour just after boiling

This works well enough for everyday brewing. The exact temperature varies by kettle, room temperature, and altitude, but the general approach gets you within ±5°C of target which is good enough for noticeable cup quality improvement.

The cold water mix approach. Boil the kettle, then add a small amount of cold water to bring the temperature down. Roughly: 100ml of cold water added to 700ml of boiling water brings the mix to about 85°C. Less precise than the rest approach but works in a pinch.

The pour into warmed cups approach. Pour boiling water into the cups first, let it cool there, then pour back into the teapot with the leaves. Each transfer takes some heat out, but how much depends on the cups and the room, so check with a thermometer the first few times. It is a traditional Chinese tea ceremony approach.

How to get the right temperature with specialist equipment

For drinkers who brew tea daily and want consistent precision, the specialist equipment is worth considering:

Temperature control electric kettle (£40 to £100). Modern temperature control kettles let you set a specific target temperature (usually in 5°C increments from 60°C to 100°C). The kettle heats to the target and holds it warm. This is the most convenient solution for daily green tea or matcha drinkers; the precise temperature consistency improves cup quality meaningfully. Brands like Smeg, KitchenAid, and Sage all make decent temperature control kettles; cheaper options exist from various brands at £40 to £60.

Kettle thermometer (£10 to £15). A simple float thermometer or instant read digital thermometer that you dip into the water to check temperature. Cheaper than a temperature control kettle but requires manual checking; works for occasional use.

Variable temperature kettle with built in thermometer. Some kettles have built in temperature displays that show the current temperature as the water cools after boiling, helping you pour at the right time. Useful intermediate option between basic kettles and full temperature control models.

For drinkers who exclusively brew black tea or herbal infusions, none of this is needed; just boiled water from any kettle is appropriate. The specialist equipment matters mostly for green tea, white tea, oolong, and matcha enthusiasts.

Hard water and soft water effects

Beyond temperature, water mineral content significantly affects cup quality. The British water chemistry context:

- **Hard water** (high in calcium and magnesium, common across southern and eastern England, the Midlands, parts of the south coast) dulls tea, produces visible scum film on top of the cup, and reduces flavour clarity
- **Soft water** (low mineral content, common in Scotland, Wales, the West Country, and parts of northern England) produces brighter, cleaner cups with better flavour clarity
- **The mineral effects compound with temperature:** hard water reduces flavour extraction efficiency at any temperature

For drinkers in hard water postcodes (which includes most of London, Cambridge, Oxford, Brighton, Reading, Bristol, the Midlands), filtered water makes a meaningful difference to cup quality. A simple jug filter (Brita, Aqua Optima) is cheap and effective; the difference is most noticeable with green and delicate black teas where mineral interference is more disruptive.

For drinkers who don't want to filter water, Yorkshire Tea Hard Water is the only mass market British black tea specifically blended for hard water areas; the blend is designed to power through the mineral interference and produce a proper cup. See the Yorkshire Tea history for the Hard Water variant context.

Family by family practical guidance

White tea: 70 to 75°C, 4 to 7 minute brewing. The most temperature sensitive tea family. Boiling water destroys the delicate character that's the entire point of white tea. See the white tea overview.

Green tea: 70 to 80°C, 1 to 3 minute brewing. The temperature sensitivity is the most common stumbling block for new green tea drinkers. Cool the kettle, brief brewing, no milk. See the green tea overview.

Matcha: 70 to 80°C, whisked for 30 to 60 seconds rather than steeped. The water temperature rule still applies because boiling water turns matcha bitter. See the matcha overview.

Oolong: 85 to 95°C depending on oxidation level (lighter oolongs cooler, dark roasted oolongs hotter). Excellent for multiple infusions. See the oolong overview.

Black tea: 95 to 100°C, 3 to 5 minute brewing. The classic British brewing approach with full boiling water and long steeps. Darjeeling is the exception; brew slightly cooler. See the black tea overview.

Pu erh: 95 to 100°C, 3 to 5 minute brewing for first infusion, multiple infusions excellent. The bold character benefits from full extraction.

Herbal infusions: 95 to 100°C, 5 to 10 minute brewing. Most herbs need extended brewing for full compound extraction; chamomile, peppermint, ginger, fennel all benefit from 8+ minutes.

Rooibos: 95 to 100°C, 5 to 10 minute brewing. Doesn't go bitter with extended brewing; can comfortably steep for 15+ minutes for a stronger cup. See the rooibos overview.

Multiple infusions and temperature

For teas that re brew well (oolong, pu erh, premium green, premium black), the temperature approach for second and subsequent infusions:

- **Oolong:** slightly hotter water for second infusion (helps extract deeper compounds), shorter brewing time
- **Pu erh:** same temperature for all infusions, slightly longer brewing each round
- **Green tea:** same temperature for second infusion, shorter brewing (30 to 60 seconds)
- **Black tea:** same temperature for second infusion if doing one, but most black teas don't re brew as well as other families

Multiple infusions are part of the value proposition of loose leaf brewing; getting the temperature right on each round preserves cup quality across re brews. See the loose leaf brewing guide for more on the technique.

What we stock

Browse the full loose leaf tea range across all categories. The most bought temperature sensitive teas on teas.co.uk:

- True English Tea (T.E.T) Everyday Green Tea, 20 Tea Bags 35g
- San Benedetto Matcha Green Tea, 400ml
- True English Tea (T.E.T) British Mix Collection, 30 Tea Bags 57.5g
- Dilmah Ceylon Pure Green Loose Leaf Tea, 100g
- Teapigs Mao Feng Green Tea, 15 Tea Bags 37.5g
- Good Earth Elderflower and Pear White Tea, 15 Tea Bags 18g

For the wider context see the green tea overview, the white tea overview, the matcha overview, the oolong overview, the black tea overview, and the herbal tea overview.

The verdict on water temperature

Water temperature is the single biggest brewing variable most British tea drinkers get wrong, particularly for green and white teas. The fix is straightforward: let the water cool to 70 to 80°C for green and white tea, checked with a thermometer or a temperature-controlled kettle, and pour just boiled water for everything else. This single change improves green tea cups dramatically and is the highest quality brewing skill upgrade for most drinkers.

The specialist equipment (temperature control kettle, kettle thermometer) is worth considering if you brew green tea or matcha daily; for occasional green tea drinkers the boil then rest approach is good enough. For

drinkers in hard water areas, filtering the water is at least as important as getting the temperature right; the mineral effects compound with temperature variables.

Don't overthink it. The basic rule is "boiling for black and herbal, cooler for green and white". That covers 90 percent of practical brewing decisions. The fine tuning between 70°C and 75°C and the specifics of multiple infusions matter to enthusiasts but aren't required for everyday cup quality.

For the wider context see the loose leaf brewing guide, the ultimate caffeine guide, the green tea overview, the white tea overview, the matcha overview, the oolong overview, the black tea overview, and the Yorkshire Tea deep dive.

What to buy now

The fastest practical upgrade for brewing at the right temperature is a variable-temperature kettle with preset buttons at 70, 80, 85, 90, and 95C. £35 to £80 gets you a kettle that ends 90% of green-tea bitterness and 100% of white-tea cooked-vegetable smell. To taste what the temperature actually does, brew the same quality green tea at 75C and at 95C: bitterness, sweetness, body, and aroma all shift. Pair with a quality porcelain gaiwan for Chinese teas and a ceramic teapot for British black.

Source

- NHS: Water, drinks and your health

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