

Delta-9 THC and total THC are related measurements, but they do not mean the same thing. Delta-9 THC is one specific cannabinoid. Total THC estimates the amount of THC that could be present after accounting for both delta-9 THC and THCA, the non-intoxicating precursor that can convert into delta-9 THC when heated.. Exactly.

The distinction matters on product labels, in third-party lab testing, and under changing federal hemp rules. A product may show a low delta-9 THC result while its total THC is higher because it contains THCA. To understand what you are buying, look beyond a single number: check the serving size, the package size, and the certificate of analysis (COA).

Delta-9 THC definition: one cannabinoid, one measurement

Delta-9-tetrahydrocannabinol, usually shortened to delta-9 THC, is the best-known intoxicating cannabinoid in cannabis. When a label or lab report lists “delta-9 THC,” it generally refers to the measured amount of that specific compound in the sample.



A delta-9 result does not automatically tell you how much THCA is present. That is important because THCA can convert into delta-9 THC when exposed to heat, such as during smoking, vaping, or cooking. A raw product’s delta-9 reading may therefore be lower than the amount of THC it could yield after decarboxylation.

Total THC includes THCA

Total THC is a calculation that accounts for delta-9 THC and the potential delta-9 THC formed from THCA. Because some mass is lost when THCA converts to delta-9 THC, the standard calculation uses a conversion factor of 0.877:

$$\text{Total THC} = \text{delta-9 THC} + (\text{THCA} \times 0.877)$$

The 0.877 factor estimates the amount of delta-9 THC that could result from the THCA in a sample. It is not a multiplier applied to delta-9 THC; it is applied to the THCA amount.

A quick calculation example

Suppose a COA reports 0.20 mg of delta-9 THC and 1.00 mg of THCA in a serving:

- THCA contribution: $1.00 \text{ mg} \times 0.877 = 0.877 \text{ mg}$
- Total THC: $0.20 \text{ mg} + 0.877 \text{ mg} = 1.077 \text{ mg}$

In this example, the delta-9 THC amount is 0.20 mg per serving, while estimated total THC is about 1.08 mg per serving. Those figures answer different questions; neither should be substituted for the other without explaining the calculation.

Why the distinction matters on a COA

A certificate of analysis (COA) is a lab report for a specific product sample or batch. It can help shoppers and retailers verify cannabinoid results, but only if they know how to read it. The COA total THC line may be calculated by the lab, shown separately, or left for the reader to calculate from the delta-9 THC and THCA results.

When reviewing a COA, check that it matches the product and batch you have. Then look for:

- **Delta-9 THC:** The measured amount of delta-9 THC.
- **THCA:** The amount of the precursor that may convert to delta-9 THC with heat.
- **Total THC:** Whether the report lists a calculated total, and what calculation it uses.
- **Units and serving size:** Results may be listed as a percentage, milligrams per gram, or milligrams per serving.
- **Batch and test dates:** The report should correspond to the current product batch, not a previous production run.

Third-party lab testing is useful, but a lab report is not a blanket guarantee about every item on a shelf. Results apply to the sample tested. A retailer should be able to connect a product's lot or batch number to its current COA. Brands such as Joy Organics publish product testing information; shoppers should still check the specific product and batch details rather than rely on a general brand statement.

Serving size versus container size: quick math matters

You know what's funny? the figures can look small when shown per serving but add up across a package. Always compare like with like: milligrams per serving against milligrams per serving, or milligrams per container against milligrams per container.

What the label reports	What to calculate	Example	THC per serving	Multiply by servings in the package	0.3 mg × 10 servings = 3 mg per container
THCA per serving	Multiply by 0.877, then add delta-9 THC	0.5 mg THCA × 0.877 = 0.4385 mg potential THC	Total THC per serving	Multiply by servings in the package	0.6 mg × 10 servings = 6 mg per container

These are arithmetic examples, not a statement about whether a product is legal. Applicable limits can depend on the governing law, the product category, and whether the rule measures THC per serving, per package, or by another method.

Why a per-container cap is stricter than a per-serving limit

A per-serving limit can allow a product to contain a higher amount overall if the package has many servings. For example, a hypothetical cap of 0.4 mg per serving could still allow 4 mg in a ten-serving package. A per-container cap instead looks at the entire package: if the limit is 0.4 mg per container, dividing the contents into ten servings does not make a product with 4 mg total fit that cap.

This is why serving-size math matters for consumers, but package-level math can matter more for compliance. A label cannot make the total amount disappear by describing a package as multiple servings. The relevant legal definition and measurement method must be checked for the product and date in question.

Federal hemp rules: the shift toward total THC

Historically, federal hemp rules have focused heavily on delta-9 THC concentration. That approach can leave an important gap: a product may have little delta-9 THC as measured but contain THCA that can convert to delta-9 THC. A total-THC approach is designed to account for that potential conversion.



A federal statutory change enacted in 2025 is scheduled to revise the hemp definition effective **November 12, 2026**. The change uses a broader framework that includes THCA in assessing THC and establishes a very low combined THC threshold for certain hemp-derived cannabinoid products: **0.4 milligrams per container**, as described in the statute. The law also addresses other categories of cannabinoids and products, so the threshold should not be treated as the only condition that determines whether a product qualifies as hemp.

That container-level cap is stricter than a per-serving limit. For a simple illustration, a package with ten servings containing 0.1 mg of relevant THC per serving would total 1 mg per container—above a 0.4 mg container cap, even though each serving is below 0.4 mg. This is a math example, not a legal determination for any particular product.

November 12 versus December 11, 2026: what the dates mean

November 12, 2026 is the scheduled effective date for the federal statutory change described above. Do not assume that every product category, agency action, state rule, or enforcement policy changes on that same date in the same way.

December 11, 2026 is sometimes presented as a second federal phase. It should not be described as a second nationwide effective date unless the specific rule, agency [how to read a CBD lab report](#) notice, or state law being discussed actually establishes that date. A separate date may relate to implementation guidance, a state requirement, or an industry transition—but that needs to be verified against its primary source.

For compliance planning, keep the dates distinct:

- **November 12:** The scheduled effective date of the federal statutory change.
- **December 11:** Verify the specific authority and obligation before describing it as a second phase.

Rules can be clarified, delayed, or supplemented, and states may set requirements that differ from federal rules. Before publishing a compliance claim or changing inventory, check the current statutory text, relevant agency guidance, and applicable state law. Avoid broad claims such as “legal in all 50 states.”

What shoppers and retailers should do

1. **Read both delta-9 and THCA results.** A delta-9-only figure does not show the full potential THC picture.
2. **Find the COA total THC line.** If it is missing, check whether the report provides enough information to calculate total THC using the 0.877 factor.
3. **Check units and package math.** Convert serving amounts to container totals when the relevant rule is package-based.
4. **Match the report to the batch.** A COA for an older batch is not proof of the current batch’s results.
5. **Confirm the applicable date and jurisdiction.** Federal changes do not erase state-specific restrictions.

The bottom line

Delta-9 THC is one measured cannabinoid. Total THC includes delta-9 THC plus the estimated THC contribution from THCA, calculated as $\text{THCA} \times 0.877$. That difference can change how a product’s potency is understood—and, under a shifting federal hemp definition, how some products are assessed.

When in doubt, look for a batch-matched COA with delta-9 THC, THCA, and a clearly explained total THC line. Then do the quick math per serving and per container. Those two totals are not interchangeable, and the package-level amount may be the number that matters most.