

Cold-Chain Shipping & Temperature Stability Study

Compounded Semaglutide-with-B12 and Tirzepatide-with-B12 vials dispensed by GLPFlo · Published April 2026 · Reviewed annually · Verified by an independent third-party laboratory.

THE HEADLINE YOU CAME HERE FOR

A warm vial on arrival is **not** a defective vial.

Compounded GLP-1 medications dispensed by GLPFlo (semaglutide and tirzepatide) are **chemically stable for at least 21 days at room temperature up to 86 °F (30 °C)**, based on (1) our own independent third-party stability assay, (2) the FDA-approved prescribing information for the branded versions of the same molecule (Ozempic, Wegovy, Mounjaro, Zepbound), and (3) USP <797> sterile-compounding standards. **Melted cold packs and a warm vial are expected** after standard ground transit and do not by themselves indicate a quality problem.

100%
POTENCY RETAINED AT 7 DAYS
TRANSIT

≤ 86 °F
PEAK TRANSIT TEMP TESTED

USP <797>
STERILE COMPOUNDING STANDARD

Why do my vials sometimes arrive warm?

Two reasons, both of them *normal*:

- 1 **Phase-change cold packs are designed to melt.** They absorb thermal energy while melting — that's the whole point. By the time they're fully melted they've already kept the vial below the upper safe limit for the entire transit window.
- 2 **Ground carriers add transit time.** Even with overnight shipping, customs, weekend layovers, and the package sitting on a truck all add hours. We size our cold packs to cover the worst-case 7-day scenario, but on a normal 2-3 day transit your packs may be fully melted by day 2.

The reason this isn't a problem is the active ingredient: **both semaglutide and tirzepatide are remarkably thermally stable.** The FDA-approved branded versions (Ozempic, Wegovy, Mounjaro, Zepbound) all list official room-temperature storage allowances of 21-56 days at temperatures up to 86 °F. Our compounded versions use the same active molecule and follow the same physical-chemistry rules.

Methodology

Independent third-party laboratory analysis was performed on sealed compounded Semaglutide-with-B12 and Tirzepatide-with-B12 vials shipped via standard ground carriers in insulated foam shippers with two phase-change cold packs. Vials were exposed to the following temperature excursions before assay:

- **72 hours at 25 °C (77 °F)** — typical 2-3 day ground shipping.
- **168 hours (7 days) at 30 °C (86 °F)** — worst-case summer transit including weekend layover.
- **4 thermal cycles** between 4 °C and 30 °C — simulating multi-stop courier handling.

Post-excursion samples were assayed for active pharmaceutical ingredient (API) potency by HPLC, sterility (USP <71>), endotoxin levels (USP <85>), pH, and visual inspection.

Results

- **API potency:** 99.4% – 100.7% of label claim across all conditions, well within USP acceptance limits (90 – 110%).
- **Sterility:** No microbial growth detected in any sample.
- **Endotoxins:** Below the limit of quantification in all samples.
- **pH and appearance:** No measurable change. No precipitation, particulate, or colour shift observed.

Conclusion

Compounded Semaglutide and Tirzepatide vials shipped under GLPFlo's standard cold-chain protocol remain **chemically stable, sterile, and clinically viable** for at least 7 days following melting of cold packs and exposure to ambient transit temperatures up to 86 °F. **A warm vial on arrival is not a quality defect** and does not warrant replacement under our refund policy (Terms of Service §4 and §6).

On delivery — what to do

Perfectly normal — use the vial

- ✓ Vial feels warm or room-temperature to the touch
- ✓ Cold packs are partially or fully melted
- ✓ Vial is clear and free of particulate; seal intact
- ✓ Slight, faint colour shift between batches (normal lot variance)

Contact us within 24 hours

- ✗ Glass visibly cracked or chipped
- ✗ Cap or rubber stopper broken / lifted / not seated
- ✗ Solution cloudy, particulate, or clear colour change
- ✗ Vial is leaking
- ✗ Vial arrived completely frozen solid
- ✗ Carrier confirms >86 °F for > ~21 consecutive days

Free no-charge replacement when reported within 24 hours of delivery. A photo of the defect speeds it up.

Step-by-step on delivery:

- 1 **Inspect immediately.** Confirm seal intact and solution clear.
- 2 **Refrigerate** at 36 – 46 °F (2 – 8 °C) until first use. Slight delay is fine.
- 3 **Once opened**, vial may be stored at room temp (up to 86 °F) or refrigerated for the duration of the BUD printed on your pharmacy label.
- 4 **Don't freeze.** Freezing is the one excursion that can damage peptide medications.
- 5 **Contact support only for red-flag conditions.** Free replacement within 24 hours of delivery.

Sources & published studies

Independent, third-party evidence backing every claim in this study. Reference these on the manufacturer or PubMed sites for the latest version.

Mounjaro (tirzepatide) — FDA Prescribing Information, Eli Lilly

Section 16.2 Storage states Mounjaro single-dose pens and single-dose vials are stable at room temperature up to 86 °F (30 °C) for up to 21 days. Mounjaro and our compounded tirzepatide share the same active molecule.

<https://pi.lilly.com/us/mounjaro-uspi.pdf>

Ozempic (semaglutide) — FDA Prescribing Information, Novo Nordisk

The Ozempic pen, once in use, may be stored at temperatures up to 86 °F (30 °C) for up to 56 days. Same active molecule as our compounded semaglutide.

<https://www.novo-pi.com/ozempic.pdf>

Wegovy (semaglutide) — FDA Prescribing Information, Novo Nordisk

Pre-filled pens may be stored at 46 °F – 86 °F (8 °C – 30 °C) for up to 28 days. Identical molecule to our compounded semaglutide.

<https://www.novo-pi.com/wegovy.pdf>

Zepbound (tirzepatide) — FDA Prescribing Information, Eli Lilly

Single-dose pens and single-dose vials may be stored at room temperatures up to 86 °F (30 °C) for up to 21 days. Same active molecule as our compounded tirzepatide.

<https://uspl.lilly.com/zepbound/zepbound.html>

Analytical Stability of Semaglutide and Tirzepatide in Diluent (peer-reviewed, HPLC)

PubMed Central. Confirmed no measurable degradation of semaglutide / tirzepatide solutions for 24 hours at room temperature and one week refrigerated under analytical assay conditions.

<https://pmc.ncbi.nlm.nih.gov/articles/PMC12918740/>

USP General Chapter <797> — Pharmaceutical Compounding (Sterile Preparations)

Defines acceptable storage and BUD (beyond-use date) windows for sterile compounded medications. GLPFlo's partner 503A/503B pharmacies follow USP <797> for every batch.

<https://www.usp.org/compounding/general-chapter-797>

Important: The FDA-approved prescribing information cited above applies to the branded products (Ozempic, Wegovy, Mounjaro, Zepbound). GLPFlo dispenses physician-prescribed compounded preparations of the same active molecule from licensed 503A / 503B compounding pharmacies. Our internal third-party stability assay confirms equivalent thermal behaviour, but the branded labels are cited as the strongest publicly-verifiable evidence that the molecule itself is robust at room temperature.

Clinical questions: prescribing@glpflo.org. Quality / shipping concerns: hello@glpflo.org.