Nanoemulsion Vitamin D Supplements: Who Sells Them and What They Cost per 10,000 IU

Prices and labels checked November 4, 2026

As of November 4, 2026, five US companies sell vitamin D marketed as a nanoemulsion or a similar nano emulsion: Quicksilver Scientific (Nanoemulsified D3K2), Nutrasal (Micro D3), Nanoceutical Solutions (Nano Vitamin D3 and Nano Vitamin D3 + K2), Rheostasis (Vitamin D3 Nano Emulsion Spray) and Dr. Spray's (a borderline "nano" spray). Notable non-US brands are Axonia Orofast (Czech Republic/EU), Sunday Natural (Germany) and Naturpharma (EU, sold through UK retailers).

For the products priced in US dollars, cost runs from about $0.13 to $3.17 per 10,000 IU. Concentrations differ more than tenfold, so cost per bottle or per fluid ounce says little about value. Nutrasal is by far the cheapest per IU, and Quicksilver is the most established US option.

TL;DR

- **US nanoemulsion vitamin D sellers:**
  - Quicksilver Scientific Nanoemulsified D3K2: $2.20 per 10,000 IU; 2,500 IU per 0.5 mL pump.
  - Nutrasal Micro D3: $0.13 per 10,000 IU; 2,000 IU per drop.
  - Nanoceutical Solutions Nano D3 and Nano D3 + K2: $2.66 per 10,000 IU; 5,000 IU per 1 mL dropperful.
  - Rheostasis Nano Emulsion Spray: $40.00; size and dose not published.
- **Evidence is mixed.**
  - A 24-person crossover study in the Journal of Orthopaedics found that Sanofi India's DePURA 60,000 IU nanoemulsion oral solution had 36% higher bioavailability (AUC) and 43% higher Cmax than Alkem's Uprise D3 softgel.
  - In an IBD trial (Kojecký et al., Frontiers in Medicine 2025), the Axonia Orofast nanoemulsion spray, at about half the conventional dose, raised blood levels by a similar amount.
  - A 2024 Indian RCT (Current Developments in Nutrition, 298 analyzed) found no significant difference between nano and conventional D3 at 1,000 IU/day.
  - None of the US brands has a published product-specific trial.

Main Comparison

Products marketed as a nanoemulsion or a similar nano emulsion. Rows are sorted by cost per 10,000 IU. Cost is calculated as list price ÷ total IU per bottle × 10,000. Total IU per bottle comes from the label dose × servings per bottle.

Brand (country)	Product	Tech claim	Cost per 10,000 IU (calc.)
Nutrasal (US)	Micro D3 Concentrate (M.E.D.S. technology)	"Sub-Micron (Nano) emulsion", 30–60 nm	$0.13 (2,000,000 IU per bottle)
Dr. Spray's (US)	Vitamin D3 Spray	"Nano technology… microdroplets"; not called nanoemulsion (borderline)	$1.33 (150,000 IU, from 240 sprays)
Quicksilver Scientific (US)	Nanoemulsified D3K2	"Nanoemulsion delivery system"; page also says liposomal	$2.20 (250,000 IU per bottle)

Brand (country)	Product	Tech claim	Cost per 10,000 IU (calc.)
Nanoceutical Solutions (US)	Nano Vitamin D3	"Nano" sub-micron particles; not called nanoemulsion (ambiguous)	$2.66 (150,000 IU per bottle)
Nanoceutical Solutions (US)	Nano Vitamin D3 + K2	Same as above (ambiguous)	$2.66 (150,000 IU per bottle)
Axonia / Labomar (Czech Rep., EU)	Vitamin D3 Axonia Orofast 1000 IU	"Patented nanoemulsion", 100–200 nm	$3.17 (150,000 IU, 150 doses)
Rheostasis (US)	Vitamin D3 (Nano Emulsion Spray)	"Nano Emulsion" in product name	Not reported (dose and size unpublished)
Sunday Natural (Germany)	Vitamin D3 5000 IU Liposomal (Rapid) Spray	"Nanoemulsion", 20–100 nm; also called liposomal	€0.17 (≈892,500 IU, ≈178 sprays)
Sunday Natural (Germany)	Vegan Vitamin D3 5000 IU Rapid Spray	Same nanoemulsion claim	€0.23 (1,070,000 IU, 214 sprays)
Naturpharma (EU)	Nano D3 spray 1000 IU	"Clinically tested nanoemulsion"	Not reported (sprays per bottle not stated)

> **Nutrasal dosing:** Nutrasal contains 2,000 IU per drop, so a full 1 mL dropper would hold roughly 66,700 IU, more than 16 times the adult upper limit of 4,000 IU/day. Dose it by the drop, never by the dropperful.

Notes:

- **Dr. Spray's:** the $1.33 figure uses the label's 5,000 IU per 8 sprays. One description on the maker's site says 1,000 IU per spray instead; if that is correct, the cost would be about $0.83 per 10,000 IU.
- **Axonia:** the $3.17 figure uses the US reseller's $47.50 price.
- **European prices:** Sunday Natural is priced in euros from the maker's site, with no USD conversion sourced.

Key Findings

- **Only three US brands explicitly use the word "nanoemulsion" or "nano emulsion" on their own sites:**
  - Quicksilver Scientific says its D3K2 is packaged in its "advanced nanoemulsion delivery system." The same page is titled "Liposomal D3K2" and describes liposomes of 20–100 nm, so its technology claim is mixed.
  - Nutrasal calls Micro D3 a sub-micron (nano) emulsion of phosphatidylcholine and vitamin D3, with 30–60 nm particles.
  - Rheostasis titles its product "Nano Emulsion Spray."
- **Nanoceutical Solutions' claim is ambiguous.** It describes nano-sized particles below one micron in an MCT-oil base with silica gel, and lists no emulsifier.
- **Dr. Spray's is borderline.** It describes nano technology that creates microdroplets, and its formula does contain polysorbate 80, but it never uses the word "nanoemulsion."
- **Cost per 10,000 IU is the useful comparison:**
  - Nutrasal: $0.13
  - Quicksilver: $2.20
  - Nanoceutical: $2.66
  - Axonia Orofast (US reseller): $3.17

- **Product-specific evidence:** the strongest belongs to Axonia Orofast, a non-US product. None of the US products (Quicksilver, Nutrasal, Nanoceutical) has a published human trial. Nutrasal's "up to 10X more absorption" claim and Sunday Natural's "double the bioavailability" claim are marketing and are not backed by product-specific trials.

Details

Technology labeling: where the claims are mixed

- **Quicksilver Scientific:**
  - The label and product copy say "Nanoemulsified D3K2," but the maker's page title is "Liposomal D3K2" and its delivery section describes small liposomes of 20–100 nm.
  - Retailers such as Nordstrom describe it as using both liposomal and nanoemulsion technology.
  - In practice it is a phospholipid-based nano-dispersion sold under both terms.
- **Sunday Natural:** the products are named "Liposomal Spray" and "Rapid Spray." The maker also says the D3 is incorporated in a nanoemulsion with 20–100 nm droplets, and that the nanoemulsion is similar in structure to liposomes.
- **Nanoceutical Solutions:** says its nano process reduces vitamin D3 to particles below one micron. Its ingredient list (MCT oil, silica gel, stevioside, flavor oil) has no emulsifier or water phase, so it is unclear whether this is a true emulsion.
- **Dr. Spray's:** uses "nano technology… microdroplets" and "nano-particle" language. It contains polysorbate 80 and MCT in water, which fits an emulsion, but the company never says "nanoemulsion" and publishes no droplet-size data.

Bioavailability and absorption studies

- **Axonia Orofast in IBD patients (product-specific RCT, 2025):**
  - Kojecký, Klhůfek, Kianička and Kohout ran the trial at Bata Regional Hospital, Zlín, Czech Republic (Frontiers in Medicine 12:1649677, August 25, 2025; NCT05733117).
  - Of 134 inflammatory bowel disease patients randomized, 120 were analyzed. For 12 weeks they received either Vitamin D3 Orofast Axonia at 1,000 IU per spray (4,000 IU twice weekly, ≈1,143 IU/day) or Vigantol drops from Merck (14,000 IU once weekly, 2,000 IU/day).
  - 25(OH)D rose by a similar amount in both groups: 9.2 vs 9.3 nmol/L in the abstract, and 11.1 vs 12.3 nmol/L in the per-protocol table.
  - The authors read this as improved bioavailability, because the spray group received about half the dose.
- **Nanoemulsion oral solution vs softgel (pharmacokinetic study, Journal of Orthopaedics):**
  - An open-label crossover in 24 healthy adults given 60,000 IU.
  - Sanofi India's DePURA water-miscible nanoemulsion solution showed 36% higher relative bioavailability than Alkem's Uprise D3 softgel capsules (AUC 0–120 h, p = 0.0001), and 43% higher Cmax.
  - A 2019 overview reporting this result also cites two clinical studies, in children and adults, that found larger 25(OH)D rises with nano preparations.
- **Satia et al. 2015 (Nutrition Journal, buccal spray vs softgel crossover):**
  - Compared a 1,000 IU softgel with a 500 IU buccal spray (1,000 IU as two sprays) for 30 days.

    - In healthy subjects, 25(OH)D rose 8.0 ng/mL with the spray vs 4.06 ng/mL with the softgel ($p < 0.0001$). In patients with malabsorption, the rises were 10.46 vs 3.96 ng/mL.
    - However, a 2020 systematic review in Nutrients (12(3):691) concluded that buccal-spray delivery does not appear superior to other modes, and noted that the one RCT favoring the spray had several limitations.
- **Counter-evidence (Indian multicentre RCT, 2024, Current Developments in Nutrition):**
    - Preparations were procured by Pulse Pharmaceuticals. 298 vitamin D-deficient adults (of 324 randomized) took 1,000 IU/day for three months as a Nano D3 buccal spray, a Nano D3 tablet (DenciumND3) or a conventional D3 tablet (Tayo).
    - 25(OH)D rose significantly in all groups, but the rises did not differ significantly between them. The authors concluded that the spray and the nano tablet were equally effective.
    - A 2017 three-arm trial (75 healthy volunteers, 3,000 IU/day) likewise found capsule and spray equally effective.
- **Autism trial (lab-made nanoemulsion, 2025):** 80 children with autism, aged 3–6, took 1,400 IU/day for 6 months as either a 61 nm olive-oil nanoemulsion or a marketed D3 drop. Only the nanoemulsion group improved significantly in autism severity and language scores. The formulation is not a commercial product.
- **Animal and in-vitro data:** in mice, a nanoemulsion raised serum 25(OH)D by 73% vs 36% for a coarse emulsion, with 3.94-fold higher in-vitro bioaccessibility. This is reported second-hand via VitaminDWiki.

Interpretation: nanoemulsions probably improve absorption modestly, most clearly in people with fat malabsorption (IBD, post-bariatric). In healthy people taking routine doses, the advantage is inconsistent, and the dose taken matters far more than the delivery format.

Closely related liquid vitamin D products that are NOT marketed as nanoemulsions

These products are liposomal or "emulsified/micellized." They are listed for comparison only.

Brand	Product	Technology claimed	Form	Size	Price and where found	Cost per fl oz	Vitamin D per serving	Serving
Sabre Sciences	Nanosol D-3 Liposomal Spray	Liposomal (name says "Nano")	Sublingual spray	60 mL	$50.00, maker catalog; $48.99 HappyBodies	$24.64	1,000 IU D3 + 80 µg K2 (MK-7)	1 spray
Codeage	Nanofood Liposomal Vitamin D3 + K2	Liposomal (name says "Nanofood")	Pump-dropper liquid	59.2 mL (2 fl oz)	$24.99, Walmart	$12.48	Not reported	1 mL (4 pumps)
Designs for Health	Emulsi-D3 Synergy (with K)	Emulsified	Drops	Not reported	Not reported	Not reported	2,000 IU D3	Not reported
Biotics Research	Bio-D-Mulsion Forte	Emulsified	Drops	1 fl oz	Not reported	Not reported	2,000 IU D3	1 drop
Pure Encapsulations	EmulsiSorb K2/D3	Emulsified	Liquid	0.7 fl oz	Not reported	Not reported	Not reported	Not reported
Adaptogen Research	Bio-Emulsion-D3	Emulsified	Drops	1 fl oz	Not reported	Not reported	2,000 IU D3	1 drop

Recommendations

- **For an explicit US nanoemulsion claim at the best value:** Nutrasal Micro D3 ($0.13 per 10,000 IU; 2,000 IU per drop) costs a fraction of the alternatives per IU. Its high concentration makes accurate drop-counting essential.
- **For D3 plus K2 from a widely stocked practitioner brand:** Quicksilver Scientific Nanoemulsified D3K2 ($2.20 per 10,000 IU; 2,500 IU + 90 µg MK-7 per pump) is easy to find at the maker, Walmart, Nordstrom and practitioner dispensaries. Expect to pay roughly 17 times more per IU than for Nutrasal.
- **For malabsorption (IBD, celiac, bariatric surgery):** the best evidence supports buccal nanoemulsion sprays such as Axonia Orofast. That product is sourced from the EU, and US availability is limited to resellers.
- **For everyone:** recheck serum 25(OH)D after 8–12 weeks rather than relying on marketing absorption multipliers. Stay at or below 4,000 IU/day from all sources unless a clinician directs otherwise.

Caveats

- **Prices** are as listed on November 4, 2026 and change often.
  - Retailer prices for Quicksilver stay near its $55 minimum advertised price.
  - Some third-party listings for Nanoceutical (for example $82–$95) are far above the maker's $39.95.
- **Non-US prices** are shown in their original currency because no reliable conversion was sourced. Sunday Natural, Axonia and Naturpharma may not ship to Washington State.
- **Missing product data:**
  - Rheostasis does not publish its bottle size, dose or ingredients online.
  - Dr. Spray's tube volume is unpublished, and its site gives conflicting doses (see the note under the main table).
- **Search limits:** the search did not cover practitioner-only products that are visible only after login on Fullscript or Emerson Ecologics, or very new Amazon-only brands. Other nanoemulsion D3 products may exist.

Sources

- [Quicksilver Scientific D3K2]
- [Walmart: Quicksilver D3K2]
- [Nordstrom: Quicksilver D3K2]
- [Nutrasal Micro D3]
- [Nanoceutical Solutions Nano Vitamin D3]
- [Nanoceutical Solutions shop]
- [EveryMarket: Nanoceutical D3 + K2]
- [GoSupps: Nanoceutical Solutions]
- [Rheostasis Nano Emulsion Spray]
- [Dr. Spray's Vitamin D3 Spray]
- [Dr. Spray's Healthy Immune Pack]
- [Sunday Natural Rapid Spray 5000 IU]

- [Sunday Natural Rapid Spray bundle]
- [Kojecký 2025, Frontiers in Medicine]
- [ResearchGate: Kojecký 2025 IBD RCT]
- [PMC6834990]
- [ScienceDirect S3050474025000205]
- [ScienceBlog: nanoemulsion D3 and autism]
- [VitaminDWiki: Nanoemulsion Vitamin D may be a substantially better form]
- [Sabre Sciences catalog]
- [HappyBodies: Sabre Sciences]
- [Fullscript: Sabre Nanosol D-3]
- [Walmart: Codeage Nanofood D3 + K2]
- [NIH DSLD: Codeage Nanofood]