Soluble Magnesium Bisglycinate Formulation Guide: Sparkling Beverages, RTD Hydration & Electrolyte Drink Mixes

Application Summary: Beverage, sparkling hydration, and stick-pack electrolyte developers face sensory, clarity, and regulatory constraints absent in capsules. MagneINNO™ **Ultra Taste Free (nominal 8% elemental magnesium)** is a water-dispersible, fully reacted magnesium bisglycinate built on proprietary MagniLift™ technology (<= 0.02% w/w free magnesium) engineered for low mineral off-notes in dissolved drink formats, while **Taste Free (10%)** supports higher-density gummy and compact trials.

1. Regulatory & Labeling Route Matrix (United States)

Product Route	Label & CFR Framework	Food-Use / Ingredient Review	Sparkling & Beverage Note
Conventional Beverage (Still RTD, Sparkling Water, Sports Hydration)	Nutrition Facts panel (**21 CFR 101.9**); RACC per **21 CFR 101.12**	Food-use lawful basis evaluated under **21 CFR 170.30**; MagneINNO holds **self-affirmed GRAS** documentation available on request for brand review	Confirm FDA 2014 Liquid Guidance alignment and review FDA 2015 Fortification Policy (which excludes carbonated drinks as conventional fortification vehicles).
Dietary Supplement Powder or Liquid Shot (Electrolyte Stick Packs, Tubs, Shots)	Supplement Facts panel (**21 CFR 101.36**); **21 CFR Part 111** cGMP	Powdered premixes labeled and represented as dietary supplements follow supplement rules unless represented as conventional food mixes	Calculate % Daily Value from actual elemental magnesium against FDA's 420 mg adult DV using the approved lot COA assay basis.

2. Beverage & Electrolyte Elemental Dosing Mass Budget

Divide target elemental magnesium by the grade's lot assay on an as-received basis. Table values assume nominal targets against the 420 mg Daily Value:

Elemental Mg Target / Serving	% Daily Value (420 mg DV)	Grade 3: Ultra Taste Free (8% Nominal) Mass Needed	% Mass in a 5,000 mg Stick Pack	Remaining Mass for Na/K Salts, Acids & Flavors
42 mg	10% DV ("Good Source" threshold check)	**525 mg**	10.5%	4,475 mg
60 mg	14% DV (rounded)	**750 mg**	15.0%	4,250 mg
84 mg	20% DV ("High / Rich Source" threshold check)	**1,050 mg**	21.0%	3,950 mg
100 mg	24% DV (rounded)	**1,250 mg**	25.0%	3,750 mg

3. Bench-Trial Protocol: Sparkling CO2 Nucleation, Clarity & Matrix Order

Step-by-Step Sparkling & RTD Addition Order

- 1. Dissolve
  Ultra Taste Free (8%)
  first in ambient deaerated water (20 to 25 C) until visually uniform before adding dry acidulants or co-salts.

Analytical, Sensory & Thermal Qualification

- **Cold Reconstitution:**
  Replicate consumer shaker agitation in cold water (4 to 8 C) for stick packs; inspect wetting, float, haze, and 30-min sediment.

- 2. Add sodium and potassium salts (citrate/chloride) next while monitoring solution pH.
- 3. Incorporate citric, malic, or phosphoric acidulants slowly to hit target pH; monitor for haze or precipitation when pairing magnesium with citrate or phosphate buffers.
- 4. Chill base cleanly before **carbonation (CO_2 injection)** to minimize dissolved-particle nucleation sites and over-foaming at fill heads.

- **Thermal / Acidified Process:** For RTD hot-fill or tunnel pasteurization (cf. 21 CFR 114.3 acidified process validation), retain pre- and post-heat turbidity (NTU), flavor, and elemental ICP-OES checks.
- **Blind Sensory Screening:** Benchmark prototypes using coded triangle or paired tests against a base control without added masking overkill.

4. Commercial Supply, Packaging & Sample Qualification

MagneINNO™ is supplied by **NutraINNO USA Inc.** and stocked in Ontario, California (50,000 sq ft warehouse; 3,000+ tons/year annual capacity; 99.8% purity and 99.8% release pass rate, tracked separately; **produced at an NSF GMP for Sport registered facility**; self-affirmed GRAS; Non-GMO Project Verified). Commercial lots ship in **25 kg fiber drums** (24-month shelf life) in ~3 days from California stock or 1 to 2 weeks for production runs. Free 50 g bench samples of 8% Ultra Taste Free and 10% Taste Free ship with lot COAs and specifications.

Technical & Regulatory References: 1. 21 CFR 170.30 (GRAS eligibility) | 2. 21 CFR 101.9, 101.12, 101.36, 111.210, 114.3 (ecfr.gov) | 3. FDA Liquid Dietary Supplements vs Beverages Guidance (2014) | 4. FDA Fortification Policy Q&A (2015) | 5. MagneINNO Online KB: https://www.magneinno.com/knowledge/soluble-magnesium-bisglycinate-sparkling-electrolyte-formulation | 6. Carbonated Trial Plan: https://www.magneinno.com/knowledge/carbonated-magnesium-beverage-trial | 7. Company & Product Facts: https://www.magneinno.com/company-product-facts

Disclaimer: Technical formulation reference for B2B food, beverage, and supplement product developers. Finished-product regulatory classification, claim substantiation, and GRAS intended-use determinations remain the brand owner's responsibility.