Technical Data Sheet (FT) — Black Seed (Nigella sativa) Oil (Cosmetic Grade)

Product Information

- **Product Name**: Nigella Sativa Seed Oil — Cosmetic Grade
- **INCI**: Nigella Sativa Seed Oil
- **CAS / EC**: 90064-32-7 / 290-094-1 (legacy CAS 8014-13-9)
- **Description**: This oil is cold-pressed from the seeds of *Nigella sativa*. It presents an orange-brown color and a characteristic odor. The oil is insoluble in water but miscible with ethanol, ether, and cosmetic oils/esters.

A) Fatty-Acid Profile (Reference Ranges)

- **Palmitic (C16:0)**: 8.0–14.0%
- **Stearic (C18:0)**: ≤ 4.0%
- **Oleic (C18:1)**: 18.0–30.0%
- **Linoleic (C18:2)**: 50.0–65.0%
- **Linolenic (C18:3)**: ≤ 1.0%
- **Eicosadienoic (C20:2)**: 2.0–3.5%

B) Physico-Chemical Specifications (Typical/Limits)

- **Refractive Index (20 °C)**: ≈ 1.474
- **Density (20 °C)**: ≈ 0.920 g/mL
- **Saponification Value**: 185–205 mg KOH/g

C) Performance & Formulation Guidance

- **Applications**: Enhances glide and conditioning in creams, lotions, balms, and hair serums. It serves as a suitable base for massage blends.
- **Compatibility**: Works well with most vegetable oils, esters, non-ionic emulsifiers, and mild surfactant bases.
- **Antioxidant Addition**: Incorporate 0.05–0.10% mixed tocopherols; consider using chelators when formulating with metal-rich actives.
- **Processing**: For optimal sensory properties, incorporate during the cool-down phase (below 40 °C).

D) Microbiology & Contaminants

- **Microbial Stability**: Due to its very low water activity, microbial growth is unlikely.
- **Contaminants**: Pesticides and heavy metals are monitored per cosmetic norms; lot-specific results are provided on the Certificate of Analysis (CoA).

E) Packaging, Storage & Shelf Life

- **Packaging Options**: Available in 250 mL, 1 L, 5 L, 20–25 L, and 190–200 kg drums.
- **Storage Recommendations**: Store in well-filled, tightly closed containers. Protect from light and heat, and keep in a cool, dry place.
- **Shelf Life**: 24 months when unopened and stored in the original packaging. Verify specific shelf life per lot on the CoA.