SDA 702 TECHNICAL BULLETIN
Network-Type Polymer Gel Adjuvant
Long-Acting Slow-Release Dual-Phase Aqueous Adjuvant

1. Product Overview

SDA 702 is a network-type polyacrylamide polymer gel (P/O system) designed as a next-generation replacement for traditional water-in-oil (W/O) emulsions. It provides strong antigen encapsulation and controlled slow release while avoiding the tissue irritation and reactogenicity associated with oil emulsions.

Composition:
- 100% Carbopol 980P (high molecular weight, network-forming polymer)
- ≤0.5% PLURONIC–mannitol emulsifier
- No animal-derived components

SDA 702 functions as a fully aqueous polymer adjuvant, improving antigen availability, persistence, macrophage uptake, and long-term immunity. It offers excellent stability, safety, and syringeability with no local or systemic reactions. Appearance: clear to slightly opalescent, faint bluish gel-white.

2. Vaccine Preparation

Typical antigen-to-adjuvant ratio (by weight): **1 : 4 – 1 : 9**
No strict mixing restrictions, but high-shear homogenization should be avoided.

3. Emulsion Characteristics

Fully aqueous polymer gel (P/O system)
Viscosity (25°C): ~40 mPa·s
Conductivity: –18 µS/cm
Particle size: < 1 µm

Stability:
- ≥12 months @ 4°C
- ≥2 months @ 25°C
- ~15 days @ 37°C

4. Immune Response

SDA 702 enhances vaccine potency by inducing strong and durable immune responses. Recommended for bacterial, viral, mycoplasma, parasitic, and recombinant protein antigens. Suitable for antigens requiring persistent stimulation such as Mycoplasma, pseudorabies, FMD, poultry vaccines, and PRRS.

5. Target Species

Used for cattle, camels, pigs, sheep, poultry, and high-value species. Ideal for pigs sensitive to W/O emulsions and poultry vaccines relying on slow-release systems.

6. Potency & Tolerance

SDA 702 provides an excellent balance between efficacy and safety, supporting long-term immunity with very low reactogenicity. Allows dose reduction or dilution without compromising protection.

7. Safety & Regulatory

Toxicological evaluations (Berlin test, Oral LD50, IP LD50, eye/skin irritation, pyrogenicity) demonstrate high safety and tolerance. Antigen media characteristics remain critical and each formulation must comply with local regulatory requirements.

SDA 702 Key Points

1. Semi-fluid aqueous polymer nanoparticle adjuvant; ratio 1:4–1:9.
2. Highly stable P/O vaccine system with ≤0.5% stabilizer; low reactions.
3. Dual mechanism: strong antigen presentation + slow-release depot effect.
4. Excellent for antigens needing prolonged immune stimulation (e.g., Mycoplasma, PRRS).

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