

Titanium® 5 + PH-M

Titanium® 5 + PH-M delivers effective immune response against the bacteria (*Mannheimia haemolytica* and *Pasteurella multocida*) and viruses (BVD types 1 and 2, IBR, PI₃ and BRSV) most associated with bovine respiratory disease (BRD) in a single vaccine for cattle as young as 2 months of age.¹⁻⁴

VIRUSES AND BACTERIA — While respiratory viruses can cause BRD on their own, they also can compromise the immune system that normally protects cattle against bacteria, allowing bacteria to attack their host and cause severe cases of BRD. Titanium 5 + PH-M offers a powerful one-two punch to the immune system to combat viruses and bacteria.

CONVENIENCE — Titanium 5 + PH-M offers the convenience and flexibility of a single vaccine that protects against BRD-causing viruses and bacteria. Approved for use in cattle 2 months of age and older, Titanium 5 + PH-M is flexible enough to be incorporated into virtually any vaccine protocol.

PROVEN AND EFFECTIVE — Titanium 5 + PH-M is proven safe and effective for cattle at all stages of production, with no interference between the viral and bacterial components of the vaccine.

VACCINATION GUIDELINES & LABEL DIRECTIONS

INDICATIONS: The Titanium line may be administered to calves nursing pregnant cows provided their dams were vaccinated as described on label.

DIRECTIONS: Rehydrate the modified live virus vaccine with accompanying bottle of liquid bacterin-toxoid and shake well. Inject 2 mL subcutaneously, using aseptic technique, followed by a second dose of monovalent bovine respiratory syncytial virus vaccine (Titanium® BRSV) and *M. haemolytica* and *P. multocida* vaccine (PULMO-GUARD® PH-M) to be given 14 to 28 days after the first dose. Annual revaccination is recommended. Calves vaccinated before weaning should be revaccinated 30 days after weaning when the possible influence of maternal antibodies is decreased.

PRECAUTIONS: Store at 35°–46°F (2°–8°C).

DO NOT FREEZE. Shake well before using. Use entire contents when first opened. Do not vaccinate within 21 days before slaughter. Burn container and all unused contents. Contains thimerosal as a preservative. Transient injection site swelling may occur. Allergic reactions may follow the use of vaccines and can cause reduced milk production in lactating dairy cattle; **ANTIDOTE:** Epinephrine



Single-vaccine solution protects against BRD-causing viruses & bacteria at every stage of production.*

The label contains complete use information, including cautions and warnings. Always read, understand and follow the label and use directions.

*Approved for calves at least 60 days old.

¹Demonstration of the compatibility of components between APHIS product codes 1181.20 (Establishment 213) and G935.04 (Establishment 315) APHIS product code 45B9.20. Study No. 2010-01 Rev. 1.

²Efficacy study for BRSV fraction to demonstrate compatibility of the BRSV component in APHIS product code: 45B9.20 (unlicensed). Study No. 2011-05 Rev. 1.

³Porter, M. 2013. Field safety evaluation of bovine rhinotracheitis-virus diarrhea-parainfluenza3-respiratory syncytial virus vaccine, modified live virus, APHIS product code 1181.20 (establishment 213) in combination with Mannheimia haemolytica-Pasteurella multocida bacterin-toxoid, APHIS product code: G935.04 (establishment 315). Protocol No. 2011-01, Rev. 02.

⁴Milliken, G. A. 2013. Mannheimia haemolytica efficacy studies demonstrating the absence of excessive interference of Titanium products with the Mannheimia haemolytica-Pasteurella multocida bacterin-toxoid.