Description
PULMO-GUARD is a *Mannheimia haemolytica* and *Pasteurella multocida* bacterin toxoid. PULMO-GUARD PHM-1 contains cellular-surface antigens of *M. haemolytica* and *P. multocida* in a triple adjuvant, while PULMO-GUARD PH-M contains antigens from chemically inactivated cultures of *M. haemolytica* Type A-1 and *P. multocida* in a double adjuvant.

Features
PULMO-GUARD PHM-1
• Ready-to-use, single dose
• Approved for use in healthy cattle of all ages
• Contains unique LIFE III adjuvant system
• Sub-Q administration; 2 mL dose
• Multiple isolates, cell-associated antigens plus a leukotoxoid
• No antibiotic restrictions

PULMO-GUARD PH-M
• Ready-to-use, no mixing required
• Sub-Q administration; 2 mL dose
• Multiple cell-associated antigens plus a leukotoxoid
• No antibiotic restrictions
• Unique, LIFE II adjuvant system

Benefits
PULMO-GUARD brand vaccines
• Easy to handle; no product loss from mixing
• Meets National Beef Quality Assurance guidelines
• May be used in conjunction with systemic antibiotics

PULMO-GUARD PHM-1
• LIFE III adjuvant system — a stronger, longer immune response; proprietary oil-in-water system with good syringeability
• Significant protection 97 days after vaccination as shown in direct challenge studies

Dosage & Administration
Using aseptic technique, inject a 2 mL dose sub-Q in front of the shoulder and midway in the neck, away from the suprascapular lymph node.

Indications
PULMO-GUARD PHM-1 is recommended for the vaccination of healthy cattle as an aid in the prevention of respiratory disease associated with *M. haemolytica* and *P. multocida*.

PULMO-GUARD PH-M is recommended for the vaccination of healthy cattle 60 days of age or older as an aid in the prevention of respiratory disease associated with *M. haemolytica* and *P. multocida*.

Packaging
PULMO-GUARD PH-M and PHM-1 are available in two sizes:
• 20 mL vial (10 doses)
• 100 mL vial (50 doses)
PULMO-GUARD PHM-1 Label

INDICATIONS: Recommended for the vaccination of healthy, susceptible cattle as an aid in the prevention of respiratory disease caused by *M. haemolytica* and *P. multocida*.

COMPOSITION: This product contains a toxoid (leukotoxoid) and cell-associated antigens from multiple isolates of *M. haemolytica* Type A-1 fractions, and cell-associated and soluble antigens from *P. multocida*.

DOSAGE: Using aseptic technique, inject 2 mL subcutaneously in front of the shoulder and midway of the neck, away from the suprascapular lymph node. Although only a single dose is necessary to confer active immunity, a booster is recommended 21 days prior to subsequent stress.

PRECAUTIONS: Store between 35 to 45 F (2 to 7 C). Do not freeze. Shake well before using. Use entire contents when first opened. Do not vaccinate within 60 days before slaughter. Anaphylactoid reactions can occur. Hypersensitivity reactions, including delayed hypersensitivity or death, may occur with a biological product and can cause reduced milk production in lactating dairy cattle. Persistent swelling may occur at the injection site.

ANTIDOTE: Epinephrine.

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PULMO-GUARD PH-M Label

INDICATIONS: For use in cattle 60 days of age or older as an aid in the prevention of respiratory disease due to *M. haemolytica* and *P. multocida*.

DOSAGE: Shake well. Inject 2 mL subcutaneously in the neck. Repeat in 14-28 days. Annual revaccination is recommended.

PRECAUTIONS: Store below 45 F (7 C). Do not freeze. Use entire contents when first opened. Do not vaccinate within 21 days of slaughter. Epinephrine should be on hand in case of anaphylaxis. Delayed and intermediate hypersensitivity reactions should be treated symptomatically. Hypersensitivity reactions, including delayed hypersensitivity or death, may occur with a biological product and can cause reduced milk production in lactating dairy cattle. Persistent swelling may occur at the injection site.

ANTIDOTE: Epinephrine.