SAFETY DATA SHEETS

This SDS packet was issued with item:

078498610

The safety data sheets (SDS) in this packet apply to the individual products listed below. Please refer to invoice for specific item number(s).

078476190 078498628



Merck Animal Health One Merck Dr. Whitehouse Station, NJ 08889

MATERIAL SAFETY DATA SHEET

Merck Animal Health urges each user or recipient of this MSDS to read the entire data sheet to become aware of the hazards associated with this material.

SECTION 1. IDENTIFICATION OF SUBSTANCE AND CONTACT INFORMATION

MSDS NAME: Bovine Vaccine

SYNONYM(S): ONSET 5 IN

ONSET 3 IN ONSET IBR IN ONSET PMH IN VISTA IBR SQ VISTA 3 SQ VISTA 5 SQ VISTA 5 L5 SQ ONCE PMH SQ

L5 SQ VL5 SQ

VISTA 5 VL5 SQ

MSDS NUMBER: SP002111

EMERGENCY NUMBER(S): (908) 423-6000 (24/7/365) English Only

Transportation Emergencies - CHEMTREC: (800) 424-9300 (Inside Continental USA) (703) 527-3887 (Outside Continental USA)

Rocky Mountain Poison Center (For Human Exposure):

(303) 595-4869

Animal Health Technical Services:

For Animal Adverse Events: Small Animals and Horses: (800) 224-5318

For Animal Adverse Events: Livestock: (800) 211-3573 For Animal Adverse Events: Poultry: (800) 219-9286

INFORMATION: Animal Health Technical Services:

For Small Animals and Horses: (800) 224-5318

For Livestock: (800) 211-3573 For Poultry: (800) 219-9286

MERCK MSDS HELPLINE: (800) 770-8878 (US and Canada)

(908) 473-3371 (Worldwide)

Monday to Friday, 9am to 5pm (US Eastern Time)

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SECTION 2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Powder, which is reconstituted to a liquid.

Off-white powder (pre-constituted). Blue-brown liquid (reconstituted).

Odorless

POTENTIAL HEALTH EFFECTS:

SECTION 2. HAZARDS IDENTIFICATION

This product is a vaccine for use in animals. This vaccine is not pathogenic to humans or animals. Local irritation to the eyes, skin, or respiratory tract may occur following direct contact or inhalation of the lyophilized product. Accidental injection may cause local swelling, irritation or necrosis at the injection site. As with any vaccine, exposure may cause hypersensitivity reactions.

LISTED CARCINOGENS

Not listed as a carcinogen by OSHA, IARC, NTP or ACGIH.

SECTION 3. COMPOSITION AND INFORMATION ON INGREDIENTS

PRODUCT USE: Vaccine

CLASS: Modified live viruses and bacteria

CHARACTERISTIC: Modified Live

CHEMICAL FORMULA: Mixture.

The formulation for this product is proprietary information. Only hazardous ingredients in concentrations of 1% or greater and/or carcinogenic ingredients in concentrations of 0.1% or greater are listed in the Chemical Composition table. Active ingredients in any concentration are listed. For additional information about carcinogenic ingredients see Section 2.

CHEMICAL COMPOSITION

| INGREDIENT | CAS NUMBER | PERCENT |
|--|------------|---------|
| Bovine Viral Diarrhea type 1 virus (Modified Live) | | Varies |
| Bovine Viral Diarrhea type 2 virus (Modified Live) | | Varies |
| Bovine Rhinotracheitis virus (Modified Live) | | Varies |
| Bovine Respiratory Syncytial virus (Modified Live) | | Varies |
| Parainfluenza type 3 viris (Modifide Live) | | Varies |
| Pasteurella multocida (Modified Live) | | Varies |
| Mannheimia haemolytica (Modified Live) | | Varies |
| Leptospira canicola (Inactivated) | | Varies |
| Leptospira grippotyphosa (Inactivated) | | Varies |
| Leptospira hardjo (Inactivated) | | Varies |
| Leptospira Icterohaemorrhagiae (Inactivated) | | Varies |
| Leptospira pomona (Inactivated) | | Varies |
| Campylobacter fetus (Inactivated) | | Varies |

ADDITIONAL INFORMATION:

This MSDS is written to provide health and safety information for individuals who will be handling the final product formulation during research, manufacturing, and distribution. For health and safety information for individual ingredients used during manufacturing, refer to the appropriate MSDS for each ingredient. Refer to the package insert or product label for handling guidance for the consumer.

SECTION 4. FIRST AID MEASURES

INHALATION:Remove to fresh air. If any trouble breathing, get immediate medical attention. Administer artificial respiration if breathing has ceased. If irritation or symptoms occur or persist, consult a physician.

SKIN CONTACT: In case of skin contact, while wearing protective gloves, carefully remove any contaminated clothing,

including shoes, and wash skin thoroughly with soap and water. If irritation or symptoms occur or persist,

consult a physician.

EYE CONTACT: In case of eye contact, immediately rinse eyes thoroughly with plenty of water. If wearing contact lenses,

remove only after initial rinse, and continue rinsing eyes for at least 15 minutes. If irritation occurs or

persists, consult a physician.

INGESTION: Rinse mouth and drink a glass of water. Do not induce vomiting unless under the direction of a qualified

medical professional or Poison Control Center. If symptoms persist, consult a physician.

NOTE TO PHYSICIAN: This product is a vaccine. Accidental injection may cause local swelling, irritation or necrosis at the

injection site. This preparation contains a preservative or antibiotic or both which may cause allergic

reactions in susceptible individuals.

MSDS NAME: Bovine Vaccine MSDS NUMBER: SP002111

Latest Revision Date: 28-Sep-2011 Page 2 of 6

SECTION 5. FIRE FIGHTING MEASURES

FLAMMABILITY DATA:

Flash Point: Not determined (liquids) or not applicable (solids).

SPECIAL FIRE FIGHTING PROCEDURES:

Wear full protective clothing and self-contained breathing apparatus (SCBA).

SUITABLE EXTINGUISHING MEDIA:

Water. Dry chemical. Carbon dioxide (CO2).

See Section 9 for Physical and Chemical Properties.

SECTION 6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS:

Wear appropriate personal protective equipment as specified in Section 8. Keep personnel away from the clean-up area.

SPILL RESPONSE / CLEANUP:

All spills should be handled according to site requirements and based on precautions cited in the MSDS. In the case of liquids, use proper absorbent materials. For laboratories and small-scale operations, incidental spills within a hood or enclosure should be cleaned by using a HEPA filtered vacuum or wet cleaning methods as appropriate. For large dry or liquid spills or those spills outside enclosure or hood, appropriate emergency response personnel should be notified. In manufacturing and large-scale operations, HEPA vacuuming prior to wet mopping or cleaning is required.

See Sections 9 and 10 for additional physical, chemical, and hazard information.

SECTION 7. HANDLING AND STORAGE

HANDLING:

Keep containers adequately sealed during material transfer, transport, or when not in use. Wash face, hands, and any exposed skin after handling. Do not eat, drink, or smoke when using this substance or mixture.

Appropriate handling of this material is dependent on many factors, including physical form, duration and frequency of process or task, and effectiveness of engineering controls. Site-specific risk assessments should be conducted to determine the feasibility and the appropriateness of all exposure control measures. See Section 8 (Exposure Controls) for additional guidance.

STORAGE

Refrigerate at 2 to 7 deg C.

See Section 8 for exposure controls and additional safe handling information.

SECTION 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

This formulation contains a Risk Group 1 biological agent. Special containment devices or equipment such as a biological safety cabinet are generally not required for handling agents assigned to Biosafety Level 1.

EXPOSURE CONTROLS

The health hazard risks of handling this material are dependent on many factors, including physical form, duration and frequency of process or task, and effectiveness of engineering controls. Site-specific risk assessments should be conducted to determine the feasibility and the appropriateness of all exposure control measures. Exposure controls for normal operating or routine procedures follow a tiered strategy. Engineering controls are the preferred means of long-term or permanent exposure control. If engineering controls are not feasible, appropriate use of personal protective equipment (PPE) may be considered as alternative control measures. Exposure controls for non-routine operations must be evaluated and addressed as part of the site-specific risk assessment.

RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT (PPE):

Respiratory Protection:

Respiratory protective equipment (RPE) may be required for certain laboratory and large-scale manufacturing tasks if potential airborne breathing zone concentrations of substances exceed the relevant exposure limit(s). Workplace risk assessment should be completed before specifying and implementing RPE usage. Potential exposure points and pathways, task duration and frequency, potential employee contact with the substance, and the ability of the substance to be rendered airborne during specific tasks should be evaluated. Initial and ongoing strategies of quantitative exposure measurement should be obtained as required by the workplace risk assessment. All RPE must conform to local and regional specifications for efficacy and performance. Consult your site or corporate health and safety professional for additional guidance.

MSDS NAME: Bovine Vaccine MSDS NUMBER: SP002111

Latest Revision Date: 28-Sep-2011 Page 3 of 6

Skin Protection: Gloves that provide an appropriate barrier to the skin are recommended if there is potential for contact with

this material. Consult your site safety staff for guidance.

Eye Protection: Safety glasses with side shields. Use of goggles or full face protection may be required based on hazard,

potential for contact, or level of exposure. Consult your site safety staff for guidance.

Body Protection: In small-scale or laboratory operations, lab coats or equivalent protection is required. Disposable Tyvek or

other dust impermeable suit should be considered based on procedure or level of exposure. Use of additional PPE such as shoe coverings, gauntlets, hood, or head covering may be necessary. Consult

your site safety staff for guidance.

In large-scale or manufacturing operations, disposable Tyvek or other dust impermeable suit is

recommended and based on level of exposure. Use of additional PPE such as shoe coverings, gauntlets,

hood, or head covering may be necessary. Consult your site safety staff for guidance.

EXPOSURE LIMIT VALUES

No exposure limits are available for the active ingredient(s) or any other hazardous ingredient in this formulation.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

FORM: Powder, which is reconstituted to a liquid.

COLOR: Off-white powder (pre-constituted). Blue-brown liquid (reconstituted).

ODOR: Odorless

pH: 7.0 SOLUBILITY:

Water: Not determined

See Section 5 for flammability/explosivity information.

SECTION 10. STABILITY AND REACTIVITY

STABILITY/ REACTIVITY:

Stable under normal conditions.

INCOMPATIBLE MATERIALS / CONDITIONS TO AVOID:

None known.

HAZARDOUS DECOMPOSITION PRODUCTS / REACTIONS:

No dangerous decomposition is expected if used according to manufacturer's specifications.

SECTION 11. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY DATA

This material or product has not been tested for acute toxicity.

REPEAT DOSE TOXICITY DATA

This product has not been tested for repeat dose toxicity.

CARCINOGENICITY:

This material or product has not been evaluated for carcinogenicity.

SECTION 12. ECOLOGICAL INFORMATION

ECOTOXICITY DATA

There are no ecotoxicity data available for these products or their components.

ENVIRONMENTAL DATA

There are no environmental data available for these products or their components.

MSDS NAME: Bovine Vaccine MSDS NUMBER: SP002111

Latest Revision Date: 28-Sep-2011 Page 4 of 6

SECTION 13. DISPOSAL CONSIDERATIONS

MATERIAL WASTE:

Disposal must be in accordance with applicable federal, state/provincial, and/or local regulations. Incineration is the preferred method of disposal, when appropriate. Operations that involve the crushing or shredding of waste materials or returned goods must be handled to meet the recommended exposure limit(s).

PACKAGING AND CONTAINERS:

Disposal must be in accordance with applicable federal, state/provincial, and/or local regulations.

SECTION 14. TRANSPORT INFORMATION

Consult current regulatory guidelines for the appropriate transportation classification and labeling of this material. Refer to site-specific procedures and requirements for additional guidance.

DOT CLASSIFICATION:

Biological products are not regulated for transport by ground when shipped in accordance with 49 CFR 173.134(b)(6).

IATA/ICAO CLASSIFICATION:

Biological products are not restricted for transport by air when shipped in accordance with IATA 3.6.2.3.1(a). Check local requirements because biological products may be biohazards in certain parts of the world.

ADR CLASSIFICATION:

Biological products are not subject to the ADR when transported by ground in accordance with ADR 2.2.62.1.9(a).

IMDG/IMO CLASSIFICATION:

Biological products are not subject to the IMO regulations when transported by vessel in accordance with the IMDG Code 2.6.3.3.1(a).

SECTION 15. REGULATORY INFORMATION

TSCA LISTING

This material or product is not subject to TSCA requirements.

U.S. STATE REGULATIONS

Check state requirements for ingredient listing.

SECTION 16. OTHER INFORMATION

Although reasonable care has been taken in the preparation of this document, we extend no warranties and make no representations as to the accuracy or completeness of the information contained therein, and assume no responsibility regarding the suitability of this information for the user's intended purposes or for the consequence of its use. Each individual should make a determination as to the suitability of the information for their particular purpose(s).

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DEPARTMENT ISSUING MSDS: Global Safety & the Environment

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Monday to Friday, 9am to 5pm (US Eastern Time)

MSDS CREATION DATE: 28-May-2009

SUPERSEDES DATE: 28-May-2009

SECTIONS CHANGED (US SUBFORMAT): New SDS

SIGNIFICANT CHANGES (US SUBFORMAT): New regional format, OEB

MSDS NAME: Bovine Vaccine MSDS NUMBER: SP002111

Latest Revision Date: 28-Sep-2011 Page 5 of 6

MSDS NAME: Bovine Vaccine MSDS NUMBER: SP002111

Latest Revision Date: 28-Sep-2011 Page 6 of 6

MERCK VACCINE AGENT SUMMARY SHEET (VASS)

Vista® 5 VL5 SQ

Health and Safety Summary Information for Employees

SECTION I - IDENTIFICATION

Organisms: Attenuated live cultures of bovine rhinotracheitis (IBR) virus; bovine virus diarrhea (BVD) virus (Types 1 & 2); bovine respiratory syncytial virus (BRSV); parainfluenza-3 virus (PI-3); *Leptospira: L. canicola, L. grippotyphosa, L. hardjo* (including the *L. borgpetersenii* serovar hardjo-bovis), *L. icterohaemorrhagiae* and *L. Pomona;* and *Campylobacter fetus*.

Characteristics: The vaccine product contains modified-live cultures of IBR, BVD (Types 1 & 2), BRSV, and PI3; inactivated cultures of Leptospira: *L. canicola, L. grippotyphosa, L. hardjo* (including the *L. borgpetersenii* serovar hardjo-bovis), *L. icterohaemorrhagiae* and *L. pomona* and *Campylobacter fetus*.

Company Information:

Merck Animal Health

2 Giralda Farms, Madison, NJ 07940-1026

Customer Service: 800-521-5767

Order Desk: 800-648-2118

Technical Service (Companion Animal): 800-224-5318

Technical Service (Livestock: cows, pigs, poultry, aquaculture): 800-211-3573

Fax: 908-473-5560

Emergency Telephone Number: 1-908-423-6000 (24/7/365)

SECTION II - HAZARD IDENTIFICATION

Vaccine protects against: Respiratory and reproductive diseases caused by IBR, BVD (Types 1 & 2), BRSV, PI3, *Leptospira* and reproductive disease caused by *Campylobacter fetus* in healthy cattle.

SECTION III - HEALTH HAZARDS

Vista® 5 VL5 SQ

Disclaimer

While this information and recommendations are believed to be accurate as of the date hereof, MERCK & CO, INC. makes no warranty with respect hereto and disclaims all liability from reliance thereon.



V10272016

Special circumstances for workers handling vaccine: None

SECTION IV - MEDICAL

Medical Surveillance: Not required.

SECTION V - RECOMMENDED PRECAUTIONS

Containment: During manufacturing, BSL-1 precautions are taken to prevent employee and/or environmental contamination when handling the attenuated live cultures. BSL-2 precautions are taken when handling live *Leptospira* cultures; once inactivated as part of the manufacturing process, the *Leptospira* and *Campylobacter fetus* cultures are no longer infectious.

SECTION VI - HANDLING INFORMATION

Spills: A spill cleanup procedure should be developed. If none is available, contain material by covering with absorbent material. Minimal personal protective equipment includes safety glasses, lab coat/work uniform, gloves, and slip resistant shoe covers. Cover with paper towels. Soak the towels with freshly prepared dilution (1:10) of bleach in tap water. Allow soaked toweling to sit for at least 10 minutes. Carefully gather all waste materials into a plastic bag, then dispose of by burning. Alternately, dispose of the bag as infectious waste/ (RMW) via a RMW contract provider.

References

1. Vista® 5VL SQ Data Sheet, http://www.merck-animal-health-usa.com/products/vista5vl5sq/overview.aspx, accessed 10/27/2016.

Vista® 5 VL5 SQ

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V10272016