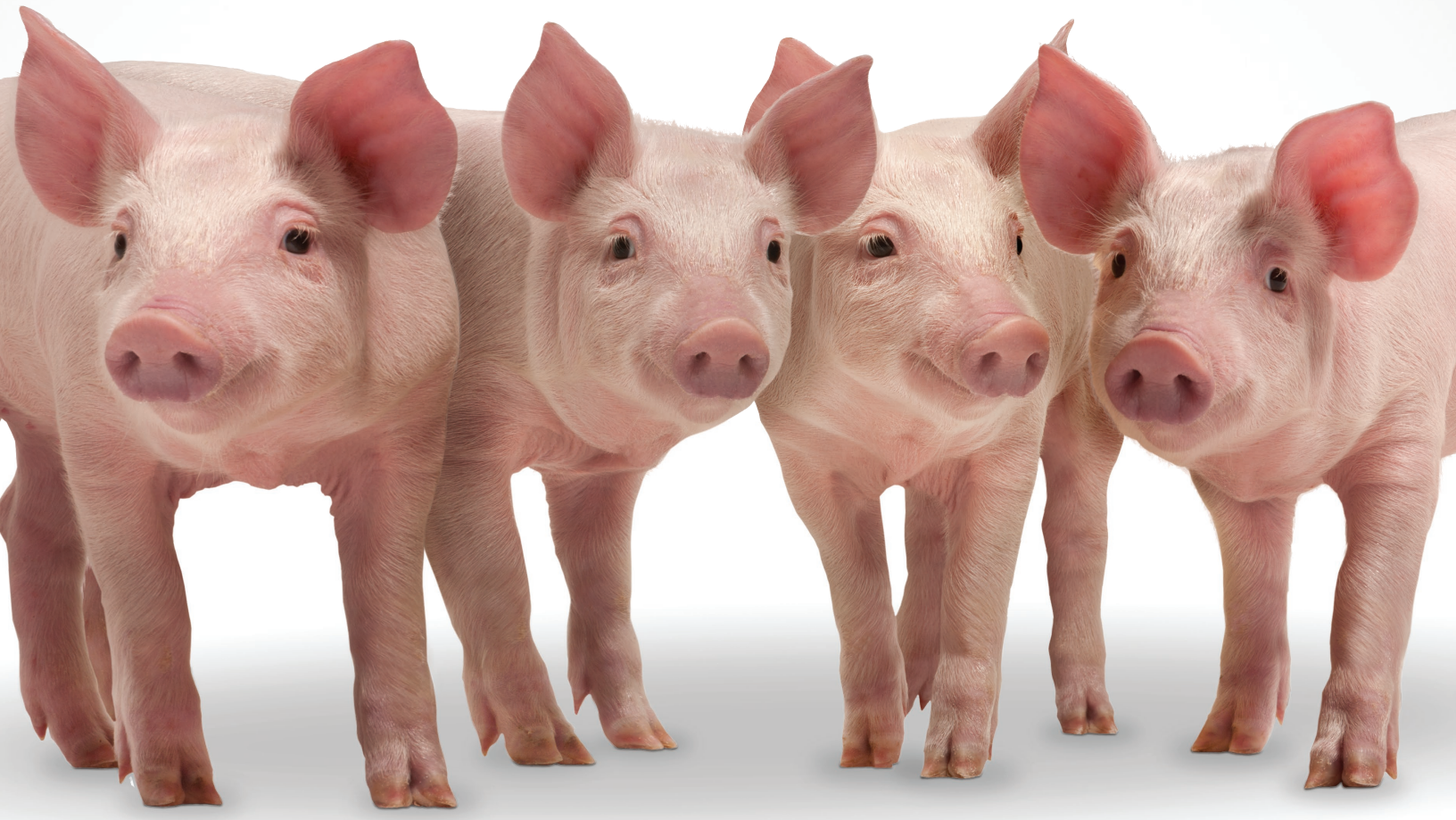
MERCK Animal Health

SWINE
PRODUCT GUIDE



DRIVEN BY PREVENTION™

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DRIVEN BY PREVENTION™

WHAT'S DRIVING US?

We're driven by the desire to lead our industry in a positive and promising direction – through our behavior, our products, and how and what we communicate. Our team is striving to lead a revolution of prevention technologies and practices that can empower our customers – U.S. and global pork producers – with the robust and proven arsenal of disease protection and reproductive options they need to be successful. This prevention-centric focus provides greater possibilities for profitability through healthier pigs, better animal welfare and broader access in a quickly evolving marketplace.

WHY DOES IT MATTER?

The ability to be proactive instead of reactive has never been more important – so preventing disease and production losses are more critical than ever due to:

- Increased interest among our customers that we minimize reliance on treatment protocols.
- The need to follow strict compliance requirements with the veterinary feed directive.
- Increased pressure from disease outbreaks that compromise operational efficiency and productivity.
- Increased curiosity about food origins among well-intentioned food consumers.

HOW ARE WE DEMONSTRATING IT?

Productivity. Opportunity. Partnership. Wellness. These key pillars embody our foundational approach to how we'll help propel our customers' businesses forward and provide the catalyst for bringing continued innovation to America's pork industry.

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BIRTH TO FINISH PRODUCTS FOR PIG HEALTH	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5
 **Argus® SC/ST** Avirulent Live Culture 500 ds, 10x100 ds An aid in the prevention of pneumonia, diarrhea, septicemia and mortality caused by *Salmonella choleraesuis* and as an aid in control of disease and shedding of *Salmonella typhimurium*. For mass application of pigs 3 weeks of age or older through the drinking water (see complete label instructions). Unique dual-strain protection and safety. Freeze-dried avirulent live culture. BluShadow – Blue colored diluent for easy observation of vaccine through proportioner.			OR		
 **Circumvent® PCV G2** With MICROSOL DILUVAC FORTE® 50 ds, 250 ds An aid in the prevention of viremia, aid in the reduction of virus shedding and an aid in the reduction of lymphoid infection caused by porcine circovirus Type 2. Convenient dosing options (one x 2 mL or two x 1 mL) for 1-dose and 2-dose programs (see complete label instructions). The only PCV2 vaccine approved for use in pigs as early as 3 days of age (2-dose option). Five-month PCV2 DOI.	IM	**Two-Dose Option:** *1 mL at three days of age or older, followed by second 1 mL three weeks later.*	IM	**One-Dose Option:** *2 mL once at three weeks of age or older.*	
 **Circumvent® PCV-M G2** With MICROSOL DILUVAC FORTE® 50 ds, 250 ds An aid in the prevention of viremia, aid in the reduction of virus shedding, aid in the reduction of lymphoid infection caused by porcine circovirus Type 2 and an aid in the reduction of lung lesions caused by *Mycoplasma hyopneumoniae*. Convenient dosing options (one x 2 mL or two x 1 mL) for 1-dose and 2-dose programs (see complete label instructions). The only PCV2 vaccine approved for use in pigs as early as 3 days of age (2-dose option). Five-month PCV2 DOI.	IM	**Two-Dose Option:** *1 mL at three days of age or older, followed by second 1 mL three weeks later.*	IM	**One-Dose Option:** *2 mL once at three weeks of age or older.*	
 **M+Pac®** With EMUNADE® 100 ds, 500 ds An aid in the prevention of pneumonia caused by *Mycoplasma hyopneumoniae* infection in swine. Convenient 1- or 2-dose options (one x 2 mL and two x 1 mL) for 1-dose and 2-dose programs (see complete label instructions). Unique patented dual-emulsion adjuvant. Up to four months DOI with a single shot.	IM or SQ	**Two-Dose Option:** *1 mL at 7-10 days of age or older, followed by second 1 mL two weeks later.*	IM or SQ	**One-Dose Option:** *2 mL once at three weeks of age or older.*	
 **Myco Silencer® ONCE** With MICROSOL DILUVAC FORTE® 500 ds An aid in the prevention of pneumonia caused by *Mycoplasma hyopneumoniae* infection in swine. Convenient 1- or 2-dose options (one x 2 mL and two x 1 mL) for 1-dose and 2-dose programs (see complete label instructions). Unique patented dual-emulsion adjuvant. Up to six months DOI with a single shot.			IM	**Two-Dose Option:** *Second 1 mL shot given 2-3 weeks after first 1 mL shot. (Second shot not required if 2 mL shot is given at week 3.)*	IM
 **Porcilis® ILEITIS** With MICROSOL DILUVAC FORTE® 50 ds, 250 ds An aid in the control of ileitis caused by *Lawsonia intracellularis*, an aid in the reduction of colonization by *Lawsonia* and an aid in the reduction of duration of fecal shedding. Convenient dosing options (one x 2 mL or two x 1 mL) for 1-dose and 2-dose programs as early as 3 days of age (2-dose option) (see complete label instructions). Duration of immunity for at least 20 weeks has been demonstrated.	IM	**Two-Dose Option:** *1 mL at three days of age or older, followed by second 1 mL three weeks later.*	IM	**One-Dose Option:** *2 mL once at three weeks of age or older.*	
 **Prime Pac® PRRS RR** Modified Live Virus (MLV) 20 ds, 100 ds This product has been shown to be effective for the vaccination of healthy swine 3 weeks of age or older against respiratory disease caused by Porcine Reproductive and Respiratory Syndrome (PRRS) virus and female breeding age swine against reproductive disease caused by PRRS virus. For sows and gilts, inject a single 1 mL dose intramuscularly (IM) 8 weeks prior to breeding, and for piglets, inject a single 1 mL dose IM at 3 weeks of age or older (see complete label instructions). Freeze-dried MLV vaccine with diluent.			IM		
 **ProSystem® Rota** Modified Live Virus (MLV) 50 ds An aid in the prevention of rotaviral diarrhea in young pigs; a 1-mL oral dose and 1-mL IM dose to pig preweaning (see complete label instructions). Unique rotavirus protection includes two major serotypes G4 and G5 of Serogroup A. Freeze-dried MLV vaccine with diluent.		IM and OR *(7-10 days preweaning)*			

PRE-BREEDING
PRODUCTS FOR REPRODUCTION EFFICIENCY AND HEALTH

MATRIX®
ALTRENOGEST SOLUTION 0.22% (2.2 MG/ML)

OR

Allows synchronization of estrus (heat), so gilt pool can be brought into heat when it is convenient and efficient. For synchronization of estrus in sexually mature gilts that have had at least one estrous cycle. Treatment with altrenogest solution 0.22% results in estrus (standing heat) four to nine days after completion of the 14-day treatment period (see complete label instructions).

P.G. 600®
[serum gonadotropin (PMSG) and chorionic gonadotropin (HCG)]

IM

Maximizes pig flow by helping more gilts and weaned sows cycle, particularly in summer, producing more pigs when market prices are high.[1,2] For induction of fertile estrus (heat) in healthy prepuberal (non-cycling) gilts over 5½ months of age and weighing at least 187 lbs. For induction of estrus in healthy weaned sows experiencing delayed return to estrus (see complete label instructions).

1. Induction and Synchronization of Estrus in Prepuberal Gilts and Anestrous Sows by a PMSG/HCG-Compound Technical Report No. 9
2. The Attainment of Estrus in Sows Administered with 400 I.U. Pregnant Mare Serum Gonadotropin and 200 I.U. Human Chorionic Gonadotropin at Weaning.

PRE-FARROW
PRODUCTS FOR REPRODUCTION EFFICIENCY AND HEALTH

ProSystem® CE
ALUMINUM HYDROXIDE 50ds

IM or SQ

For use in healthy pregnant swine as an aid in the prevention of enterotoxemia and colibacillosis in their nursing piglets. A purified and adjuvanted product containing *Escherichia coli* bacterins of our major pilus antigens (K88, K99, F41, 987P) and cell free *Clostridium perfringens* type C toxoid (see complete label instructions).

ProSystem® RCE
Modified Live Virus (MLV) 25ds

IM

An aid in prevention of rotaviral diarrhea, enterotoxemia colibacillosis in nursing pigs of vaccinated sows/gilts. Unique rotavirus and seven-way scours protection. Includes two major rotavirus serotypes G4 and G5 of Serogroup A. Freeze-dried MLV vaccine with bacterin/toxoid diluent (see complete label instructions).

PARASITICIDE
PRODUCTS FOR PIG HEALTH

safe-guard® (fenbendazole)

Safeguard Dewormer
20% Type A Medicated Feed Article

For the removal and control of Lungworms (*Metastrongylus apri, Metastrongylus pudendotectus*), Gastrointestinal worms (Adult and larvae (L3, L4 stages, liver, lung, intestinal forms); large roundworms (*Ascaris suum*); nodular worms (*Oesophagostomum dentatum, O. quadrispinulatum*); small stomach worms (*Hyostrongylus rubidus*); whipworms, adult and larvae (L2, L3, L4 stages - intestinal mucosal forms), (*Trichuris suis*)), Kidney worms (Adult and larvae (*Stephanurus dentatus*)). The Safe-Guard Dewormer 20% Type A Medicated Feed Article can only be purchased by an approved medicated Feed Mill (see complete label instructions). Ask your Merck Animal Health Representative for the various Safe-Guard presentations available from our distributor partners.

SYMPTOMATIC CARE
PRODUCTS FOR PIG HEALTH

Banamine®-S
(flunixin meglumine injection)

IM

For control of pyrexia (fever) associated with swine respiratory disease (see complete label instructions).

RNA PARTICLE TECHNOLOGY PRODUCTS FOR PIG HEALTH

SEQUIVITY®

SEQUIVITY® RNA particle technology

An innovative and highly advanced RNA particle technology that's used to create flexible, safe and precise solutions to new and evolving disease challenges. This remarkable technology targets specific pathogens to produce prescription, customized vaccines against both viral and bacterial pathogens. SEQUIVITY technology has been used to address disease challenges such as PCV2, PCV3, rotavirus, influenza and more. Contact a Merck Animal Health representative or your veterinarian to find out more.

DRIVEN BY PREVENTION™

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MERCK ANIMAL HEALTH VACCINE ANTIGEN CHART

● = **Indicated Use**

■ = **Modified Live**

	Protection														
	Sows	Pigs	*Clostridium perfringens* Type C	*Escherichia coli* K88, K99, 987P, F41	*Erysipelothrix rhusiopathiae*	*Lawsonia intracellularis*	*Leptospira* (5-way)	*Mycoplasma hyopneumoniae*	Parvovirus	Porcine Circovirus Type 2	PRRSV	*Rotavirus A* (2 serotypes)	*Salmonella choleraesuis*	*Salmonella typhimurium*	TGE
Circovirus Vaccines															
Circumvent® PCV G2		●								●					
Circumvent® PCV-M G2		●						●		●					
Respiratory Vaccines															
Myco Silencer® ONCE		●						●							
M+Pac®		●						●							
Prime Pac® PRRS RR	●	●									●				
Enteric Vaccines															
Porcilis® Ileitis		●				●									
Argus® SC/ST		●											●	●	
ProSystem® RCE	●		●	●								●			
ProSystem® CE	●		●	●											
ProSystem® Rota		●										●			

RECOMMENDED NEEDLE SIZES AND LENGTHS:

Intramuscular Injection	Gauge	Length
Baby Pigs	18 or 20	5/8" or 1/2"
Nursery	16 or 18	3/4" or 5/8"
Finisher	16	1"
Breeding Stock	14 or 16	1" or 1 1/2"
Subcutaneous Injection	Gauge	Length
Nursery	16 or 18	1/2"
Finisher	16	3/4"
Breeding Stock	14 or 16	1"

BANAMINE® -S

(FLUNIXIN MEGLUMINE INJECTION (50 MG/ML))

℞ **For intramuscular use in swine.**

Veterinary Not for use in breeding swine.

NADA #101-479, Approved by FDA.

CAUTION: Federal law restricts this drug to use by or on the order of a licensed veterinarian.

DESCRIPTION: Each milliliter of BANAMINE-S (flunixin meglumine injection) contains 50 mg flunixin (equivalent to 83 mg flunixin meglumine), 0.1 mg edetate disodium, 2.5 mg sodium formaldehyde sulfoxylate, 4.0 mg diethanolamine, 207.2 mg propylene glycol; 5.0 mg phenol as preservative, hydrochloric acid, water for injection q.s.

CLINICAL PHARMACOLOGY: Flunixin meglumine is a potent non-narcotic, nonsteroidal, analgesic agent with anti-inflammatory and antipyretic activity. It is significantly more potent than pentazocine, meperidine, and codeine as an analgesic in the rat yeast paw test.

Flunixin is known to persist in inflammatory tissues[1] and is associated with anti-inflammatory properties which extend well beyond the period associated with detectable plasma drug concentrations[2]. Therefore, prediction of drug concentrations based upon estimated plasma terminal elimination half-life will likely underestimate both the duration of drug action and the concentration of drug remaining at the site of activity.

The pharmacokinetic profiles were found to follow a 2-compartmental model, although a deep (third) compartment was observed in some animals. The mean terminal elimination half-life (ß half-life) of flunixin after a single intramuscular injection of Banamine (2.2 mg/kg) to pigs was between 3 and 4 hours. The mean observed maximum plasma concentration was 2944 ng/mL, achieved at a mean time of approximately 0.4 hours. The mean $AUC_{(0\text{-}LOQ)}$ was 6431 ng*hr/mL. Following IM administration of flunixin, quantifiable drug concentration could be measured up to 18 hours post dose. The mean volume of distribution was 2003 mL/kg and the mean total clearance was 390 mL/hr/kg. The mean absolute bioavailability of flunixin following an intramuscular injection in the neck was 87%.

INDICATION: BANAMINE-S (flunixin meglumine injection) is indicated for the control of pyrexia associated with swine respiratory disease.

DOSE AND ADMINISTRATION: The recommended dose for swine is 2.2 mg/kg (1 mg/lb; 2 mL per 100 lbs) body weight given by a single intramuscular administration. The injection should be given only in the neck musculature with a maximum of 10 mL per site.

USE WITHIN 28 DAYS OF FIRST PUNCTURE AND PUNCTURE A MAXIMUM OF 10 TIMES. WHEN USING A DRAW-OFF SPIKE OR NEEDLE WITH BORE DIAMETER LARGER THAN 18 GAUGE, DISCARD ANY PRODUCT REMAINING IN THE VIAL IMMEDIATELY AFTER USE.

Note: Intramuscular injection may cause local tissue irritation and damage. In an injection-site irritation study, the tissue damage did not resolve in all animals by Day 28 post-injection. This may result in trim loss of edible tissue at slaughter.

CONTRAINDICATIONS: There are no known contraindications to this drug in swine when used as directed. Do not use in animals showing hypersensitivity to flunixin meglumine. Use judiciously when renal impairment or gastric ulceration is suspected.

RESIDUE WARNINGS: SWINE MUST NOT BE SLAUGHTERED FOR HUMAN CONSUMPTION WITHIN 12 DAYS OF THE LAST TREATMENT.

PRECAUTIONS: As a class, cyclo-oxygenase inhibitory NSAIDs may be associated with gastrointestinal, renal and hepatic toxicity. Sensitivity to drug-associated adverse events varies with the individual patient. Patients at greatest risk for adverse events are those that are dehydrated, on concomitant diuretic therapy, or those with existing renal, cardiovascular, and/or hepatic dysfunction. Concurrent administration of potentially nephrotoxic drugs should be carefully approached. NSAIDs may inhibit the prostaglandins that maintain normal homeostatic function. Such prostaglandin effects may result in clinically significant disease in patients with underlying or pre-existing disease that has not been previously diagnosed.

Since many NSAIDs possess the potential to produce gastrointestinal ulceration, concomitant use of flunixin meglumine with other anti-inflammatory drugs, such as other NSAIDs and corticosteroids, should be avoided.

Not for use in breeding swine. The reproductive effects of BANAMINE-S (flunixin meglumine injection) have not been investigated in this class of swine.

Intramuscular injection may cause local tissue irritation and damage. In an injection site irritation study, the tissue damage did not resolve in all animals by Day 28 post-injection. This may result in trim loss of edible tissue at slaughter.

ADVERSE REACTIONS: Flunixin was mildly irritating at the injection sites. No other flunixin-related changes (adverse reactions) were noted in swine administered a 1X (2.2 mg/kg; 1.0 mg/lb) dose for 9 days.

ANIMAL SAFETY: Minimal toxicity manifested itself as statistically significant increased spleen weight at elevated doses (5X or higher daily for 9 days) with no change in normal microscopic architecture.

HOW SUPPLIED: BANAMINE-S (flunixin meglumine injection), 50 mg/mL is available in 100-mL (NDC # 0061-1838-30) multi-dose vials.

Store at or below 25°C (77°F). Do not freeze.

See the In-Use statement as provided in the Dose and Administration section**.**

REFERENCES:

1. Lees P, Higgins AJ. Flunixin inhibits prostaglandin E_2 production in equine inflammation. *Res Vet Sci.* 1984; 37:347-349.

2. Oldensvik K. Pharmacokinetics of flunixin and its effect on prostaglandin $F_{2\alpha}$ alpha metabolite concentrations after oral and intravenous administration in heifers. *J Vet Pharmacol Ther.* 1995; 18:254-259.

Distributed by: Intervet Inc. d/b/a Merck Animal Health Madison, NJ 07940

Made in Germany.
Rev. 01/17

P.G. 600®

(SERUM GONADOTROPIN AND CHORIONIC GONADOTROPIN)

DESCRIPTION: Gilts normally reach puberty (begin experiencing normal estrous cycles and exhibiting regular estrus or heat) at any time between six and eight months of age, although some gilts will not have exhibited their first estrus at ten months of age. Age at first estrus is influenced by several factors including breed type, season of the year, environmental conditions, and management practice (Hurtgen, 1986). Sows normally exhibit estrus three to seven days after weaning their litters; however, some otherwise healthy sows may not exhibit estrus for 30 days or more after weaning (Dial and Britt, 1986). The causes of delayed return to estrus in healthy sows are poorly understood, but probably include season of the year (so-called seasonal anestrus; Hurtgen, 1979), adverse environmental conditions, such as high ambient temperatures (Love, 1978), and the number of previous litters, because the condition is more prevalent after the first litter than after later litters (Hurtgen, 1986).

P.G. 600® is a combination of serum gonadotropin (Pregnant Mare Serum Gonadotropin or PMSG) and chorionic gonadotropin (Human Chorionic Gonadotropin or hCG) for use in prepuberal gilts (gilts that have not yet exhibited their first estrus) and in sows at weaning. It is supplied in freeze-dried form with sterile diluent for reconstitution.

In gilts and sows, the action of serum gonadotropin is similar to the action of Follicle-Stimulating Hormone (FSH), which is produced by the animals' anterior pituitary gland. It stimulates the follicles of the ovaries to produce mature ova (eggs), and it promotes the outward signs of estrus (heat).

The action of chorionic gonadotropin in gilts and sows is similar to the action of Luteinizing Hormone (LH), which is also produced by the animals' anterior pituitary gland. It causes the release of mature ova from the follicles of the ovaries (ovulation), and it promotes the formation of corpora lutea, which are necessary for the maintenance of pregnancy once the gilt has become pregnant.

The combination of serum gonadotropin and chorionic gonadotropin in P.G. 600® induces fertile estrus in most prepuberal gilts and weaned sows three to seven days after administration (Schilling and Cerne, 1972; Britt et al., 1986; Bates et al., 1991). The animals may then be mated, or in the case of gilts, mating may be delayed until the second estrus after treatment.

NOTE: P.G. 600® IS INTENDED AS A MANAGEMENT TOOL TO IMPROVE REPRODUCTIVE EFFICIENCY IN SWINE PRODUCTION OPERATIONS. TO OBTAIN MAXIMUM BENEFIT FROM THIS PRODUCT, ESTRUS DETECTION AND OTHER ASPECTS OF REPRODUCTIVE MANAGEMENT MUST BE ADEQUATE. IF YOU ARE IN DOUBT ABOUT THE ADEQUACY OF YOUR BREEDING PROGRAM, CONSULT YOUR VETERINARIAN.

P.G. 600® is available in five dose vials. FIVE DOSE VIALS (order Code No. 021828) – One vial containing white freeze-dried powder and one vial containing sterile diluent. When reconstituted, the five dose vial (25 mL) of P.G. 600® contains:

SERUM GONADOTROPIN (PMSG)	2,000 I.U.
CHORIONIC GONADOTROPIN (hCG)	1,000 I.U.

(equivalent to 1,000 USP Units chorionic gonadotropin)

INDICATIONS FOR USE: PREPUBERAL GILTS: P.G. 600® is indicated for induction of fertile estrus (heat) in healthy prepuberal (non-cycling) gilts over five and one-half months of age and weighing at least 85 kg (187 lb.). SOWS AT WEANING: P.G. 600® is indicated for induction of estrus in healthy weaned sows experiencing delayed return to estrus.

CAUTIONS: Treatment will not induce estrus in gilts that have already reached puberty (begun to cycle). Gilts that are less than five and one-half months of age or that weight less than 85 kg (187 lb.) may not be mature enough to continue normal estrus cycles or maintain a normal pregnancy to full term after treatment.

Treatment will not induce estrus in sows that are returning to estrus normally three to seven days after weaning. Delayed return to estrus is most prevalent after the first litter; the effectiveness of P.G. 600® has not been established after later litters. Delayed return to estrus often occurs during periods of adverse environmental conditions, and sows mated under such conditions may farrow smaller than normal litters.

DOSAGE AND ADMINISTRATION: One dose (5 mL) of reconstituted P.G. 600® , containing 400 I.U. serum gonadotropin (PMSG) and 200 I.U chorionic gonadotropin (hCG), should be injected into the gilt or sow's neck behind the ear.

Prepuberal gilts should be injected when they are selected for addition to the breeding herd. Sows should be injected at weaning during periods of delayed return to estrus.

Directions for Use:

FIVE DOSE VIAL: Using a sterile syringe and a sterile 0.90 X 38 mm (20 g X 1 1/2") hypodermic needle, transfer approximately 5 mL of the sterile diluent into the vial of freeze-dried powder. Shake gently to dissolve the powder. Transfer the dissolved product back into the vial of diluent and shake gently to mix. Inject one dose (5 mL) into the gilt or sow's neck behind the ear.

STORAGE PRECAUTIONS: Store at 36-46°F (2-8°C). Once reconstituted, P.G. 600 should be used immediately. Unused solution should be disposed of properly and not stored for future use. Spent hypodermic needles and syringes generated as a result of the use of this product must be disposed of properly in accordance with all applicable Federal, State and local regulations.

REFERENCES:

Bates, R. O., B. N. Day, J. H. Britt, L .K. Clark and M.A. Brauer (1991). Reproductive performance of sows treated with a combination of Pregnant Mare's Serum Gonadotropin and Human Chronic Gonadotropin at weaning in the summer. *Journal of Animal Science* **69:894**.

Britt. J. H., B. N. Day, S .K. Webel and M.A. Brauer (1989). Induction of fertile estrus in prepuberal gilts by treatment with a combination of Pregnant Mare's Serum Gonadotropin and Human Chronic Gonadotropin. *Journal of Animal Science* **67:1148**.

Dial, G. D., and J. H. Britt (1986). The clinical endocrinology of reproduction in the pig. In: D. A. Morrow (ed.) *Current Therapy in Theriogenology 2.* **W. B. Saunders Company, Philadelphia. p.905**.

Hurtgen, J. P. (1979). Seasonal breeding patterns in female swine. Ph.D. Dissertation. University of Minnesota.

Hurtgen, J. P. (1986). Noninfectious infertility in swine. In: D. A. Morrow (ed.) *Current Therapy in Theriogenology 2.* **W. B. Saunders Company, Philadelphia. p.962**.

Love, R. J. (1978). Definition of a seasonal infertility problem in pigs. *Veterinary Record* **103:443**.

Schilling, E., and F. Cerne (19720. Induction and synchronization of oestrus in prepuberal gilts and anestrous sows by a PMS/HCG-compound. *Veterinary Record* **91:471**.

MATRIX®

(ALTRENOGEST SOLUTION 0.22% (2.2 MG/ML))

ACTIVE INGREDIENTS: Altrenogest solution 0.22% (2.2 mg/mL)

USE: For synchronization of estrus in sexually mature gilts that have had at least one estrous cycle. Treatment with altrenogest solution 0.22% results in estrus (standing heat) 4 to 9 days after completion of the 14-day treatment period.

CAUTION: Federal law prohibits extra-label use of this drug to enhance food and/or fiber production in animals.

DO NOT USE: In gilts having a previous or current history of uterine inflammation (i.e., acute, subacute or chronic endometritis).

WARNINGS:

USER/HANDLER SAFETY:

Keep this and all medication out of the reach of children. Avoid skin contact. Wear vinyl, neoprene or nitrile protective gloves when handling this product. DO NOT USE LATEX GLOVES. Pregnant women or women who suspect they are pregnant should not handle MATRIX® (altrenogest) Solution 0.22%. Women of childbearing age should exercise extreme caution when handling this product. Accidental absorption could lead to a disruption of the menstrual cycle or prolongation of pregnancy. Wash off accidental spillage on the skin immediately with soap and water.

People who should not handle this product:

1. Women who are or suspect they are pregnant.
2. Anyone with thrombophlebitis or thromboembolic disorders or with a history of these events.
3. Anyone with cerebral-vascular or coronary-artery disease.
4. Women with known or suspected carcinoma of the breast.
5. People with known or suspected estrogen-dependent neoplasia.
6. Women with undiagnosed vaginal bleeding.
7. People with benign or malignant tumors which developed during the use of oral contraceptives or other estrogen-containing products.
8. Anyone with liver dysfunction or disease.

ACCIDENTAL EXPOSURE: Altrenogest is readily absorbed from contact with the skin. In addition, this oil based product can penetrate porous gloves. Altrenogest should not penetrate intact vinyl, polyethylene, neoprene, butyl or nitrile protective gloves; however, if there is leakage (i.e., pinhole, spillage, etc.) the contaminated area covered by such occlusive materials may have increased absorption.

The following measures are recommended in case of accidental exposure.

SKIN EXPOSURE: Wash immediately with soap and water.

EYE EXPOSURE: Immediately flush with plenty of water for 15 minutes. Get medical attention.

IF SWALLOWED: Do not induce vomiting. MATRIX® (altrenogest) Solution 0.22% contains an oil. Call a physician. Vomiting should be supervised by a physician because of possible pulmonary damage via aspiration of the oil base. If possible, bring the container and labeling to the physician.

EFFECTS OF OVEREXPOSURE: There has been no human use of this specific product. The information contained in this section is extrapolated from data available on other products of the same pharmacological class that have been used in humans. Effects anticipated are due to the progestational activity of altrenogest. Acute effects after a single exposure are possible; however, continued daily exposure has the potential for more untoward effects such as disruption of the menstrual cycle, uterine or abdominal cramping, increased or decreased uterine bleeding, prolongation of pregnancy and headaches. The oil base may also cause complications if swallowed. In addition, the list of people who should not handle this product is based upon the known effects of progestins used in humans on a chronic basis.

HUMAN FOOD SAFETY: GILTS MUST NOT BE SLAUGHTERED FOR HUMAN CONSUMPTION FOR 21 DAYS AFTER THE LAST TREATMENT.

ENVIRONMENTAL SAFETY: Place empty drug containers, waste from rinsing the dosing gun, protective gloves or other articles that come in contact with this product in a leak-resistant container for disposal in accordance with applicable Federal, state and local regulations.

ADVERSE REACTIONS AND POTENTIAL SAFETY HAZARDS: Underfeeding of MATRIX® may lead to the occurrence of cystic follicles.

WHEN USING THIS PRODUCT: A small percentage (less than 5%) of treated gilts may exhibit estrus (standing heat) during the 14-day treatment period. Gilts nearing estrus at the start of the 14-day treatment period may express estrus early in that period.

DOSAGE AND DIRECTIONS: While wearing protective gloves, remove shipping cap and seal; replace with enclosed plastic dispensing cap. Connect the Matrix® Dosing Device to the solution bottle according to the dosing device instructions provided as an attachment to the Matrix® Dosing Device package.
Administer 6.8 mL (15 mg altrenogest) per gilt once daily for 14 consecutive days. Treat gilts on an individual animal basis by top-dressing MATRIX® on a portion of each gilt's daily feed allowance. To produce the desired synchronization of estrus in a group of gilts, treat all of the gilts daily for the same 14-day period.

OTHER INFORMATION:

STORAGE: Store Matrix® solution bottle and dosing device when loaded with solution for continued use at or below room temperature, 77°F (25°C). Close tightly.

Questions OR Comments

- To report a suspected adverse reaction, call Merck at 1-800-211-3573.
- To obtain product information, including material safety data sheet (MSDS), call 1-800-441-8272.
- For additional information about adverse drug experience for animal drugs, contact FDA at 1-888-FDA-VETS or online at http://www.fda.gov/Animal/Veterinary/SafetyHealth.

www.merck-animal-health.com

NADA #141-222, Approved by FDA

NET CONTENTS: 1000 mL 638100A, 638250A, 638150A, 638200A **NAC**.: 11061220

For complete information on use/handling of this product, see accompanying product package insert.

SAFE-GUARD® DEWORMER

(20% TYPE A MEDICATED FEED ARTICLE)

INTERVET/MERCK ANIMAL HEALTH

(fenbendazole)

SWINE: Growing pigs, gilts, pregnant sows, and boar

MUST BE MIXED BEFORE FEEDING ACCORDING TO DIRECTIONS AND PERMITTED CLAIMS. FOR USE IN MANUFACTURED FEEDS ONLY.

ACTIVE DRUG INGREDIENT: Fenbendazole 200 grams per kilogram (90.7 grams per pound).

INERT INGREDIENTS: Roughage Products or Roughage Products and Calcium Carbonate; and Mineral Oil or Soybean Oil.

SWINE: Growing pigs, gilts, pregnant sows, and boars

FOR THE REMOVAL AND CONTROL OF:

Lungworms: (*Metastrongylus apri, Metastrongylus pudendotectus*).

Gastrointestinal worms: Adult and larvae (L3, L4 stages, liver, lung, intestinal forms); large roundworms (*Ascaris suum*); nodular worms (*Oesophagostomum dentatum, O. quadrispinulatum*); small stomach worms (*Hyostrongylus rubidus*); whipworms, adult and larvae (L2, L3, L4 stages - intestinal mucosal forms), (*Trichuris suis*).

Kidney worms: Adult and larvae (*Stephanurus dentatus*).

DOSAGE REGIMEN

9 mg fenbendazole per kg body weight (4.08 mg fenbendazole per pound) to be fed as the sole ration over a period of 3 to 12 days.

EXAMPLE OF MIXING AND FEEDING RATES FOR SAFE-GUARD® 20% TYPE A MEDICATED ARTICLE

Average daily feed consumption		Amount of SAFE-GUARD® 20% Type A Medicated Article added to each ton of swine feed based on weight and average feed consumption					
		Treatment Period					
		3 Days		6 Days		12 Days	
Pig. Wt. (lbs.)	lbs. of Feed	lbs.	Grams	lbs.	Grams	lbs.	Grams
30	2.25	0.40	182	0.20	91	0.10	46
50	3.20	0.47	213	0.24	107	0.12	54
75	4.25	0.53	241	0.27	121	0.14	61
100	5.30	0.57	258	0.29	129	0.15	65
150	6.80	0.66	301	0.33	151	0.17	76
200	8.00	0.75	341	0.38	171	0.19	86

Feed as the sole ration for three (3) to twelve (12) consecutive days. No prior withdrawal of feed or water necessary. When feed containing SAFE-GUARD® has been blended according to the above rates based on pig weight and average daily feed consumption, and is then fed for 3-12 days, a total intake of 9 mg fenbendazole per kilogram body weight (4.08 mg fenbendazole per pound) is assured. Swine feeds containing SAFE-GUARD® can be fed pelleted or as meal.

GENERAL USE DIRECTIONS

It is recommended that SAFE-GUARD® 20% Type A Medicated Article be diluted before addition to the feed. A dilution of one part of SAFE-GUARD®20% Type A Medicated Article and nine parts of grain carrier is the suggested working premix. The working premix is then blended with the complete feed mixture. Thoroughly mix both working premix and complete feed to ensure complete and uniform distribution of the SAFE-GUARD® 20% Type A Medicated Article.

WARNING: KEEP THIS AND ALL DRUGS OUT OF THE REACH OF CHILDREN. NOT FOR USE IN HUMANS. The Material Safety Data Sheet (MSDS) contains more detailed occupational safety information. To report adverse effects, obtain an MSDS, or for assistance contact customer service at 1-800-441-8272.

RESIDUE WARNING: There is no pre-slaughter withdrawal period as SAFE-GUARD® can be fed to day of slaughter.

CONSULT YOUR VETERINARIAN FOR ASSISTANCE IN THE DIAGNOSIS, TREATMENT, AND CONTROL OF PARASITISM

STORE AT OR BELOW 25°C (77°F). EXCURSIONS UP TO 40°C (104°F) ARE PERMITTED.

Distributed by: Intervet Inc., Millsboro, DE 19966

NADA # 131-675, Approved by FDA

Net Weight

25 pounds (11.34 kg) 784628-B

CPN: 1047389.1

MERCK Animal Health

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