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Preface: This brochure provides general information about using Selontra® rodent bait to control rat and mice populations in swine facilities. It includes guidelines for identifying common rodent pests, steps for complete rodent control, and recommended techniques for applying Selontra® rodent bait along with relevant safety considerations. As an industry leader in pest management, BASF is committed to providing you with the solutions and knowledge you need to protect the health of your pigs and help prevent damage to your facilities, equipment and supplies. Selontra® rodent bait is an innovative solution that can help your swine farms operate more productively.

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#### **Controlling Rodents in a Challenging Environment**

Each year, rodents destroy approximately 20 percent of the world's agricultural products, cause enormous amounts of damage to swine farms, and spread more than 200 human pathogens. With an abundance of food, water and places to harbour, swine facilities are very attractive to rodents, which can cause significant problems. Rodents consume and contaminate feed, spread disease and damage equipment and structures. Furthermore, rodents are predators of small pigglets.

The health of your stock, the cleanliness of your feed and the good condition of your shelters are essential to your business and its profitability—but rodent infestations can threaten them all. To control these infestations, you need effective solutions you can count on.



Even a small rodent population will consume and contaminate as much as 20 tons of feed annually.3

Rodents damage your facility gnawing on electrical wires and

in many ways, including destroying insulation.





Carriers of at least 45 diseases and 200 human pathogens,2 rodents are responsible for an estimated \$207 million in Salmonella-related medical costs due to pork products annually.4

#### **BASF Rodent Solutions**

BASF recognises the realities of modern swine operations, which is why we deliver rodent control solutions to serve those facilities' unique needs. We understand the need for the quickest, most effective and most efficient control measures. We know there are numerous challenges to maintaining control, including the fact that rodents can be resistant to conventional rodenticides, restrictions on the types of rodenticides that can be utilised, contamination and residue risks, and the difficulty of restricting rodents' access to animal feed throughout your facility.

Our solution is a comprehensive rodent control program tailored to help commercial swine facility managers and pest control professionals to:

- Identify rodent activity and the conditions that increase rodent population pressure
- Select the appropriate measures that will lead to control and mitigation of rodents
- Eliminate rodents quickly and safely with lower risk of contamination and residues
- Monitor results and respond to new activity

A leader in providing sustainable solutions, BASF offers the industry's most innovative, effective and efficient solutions. We stand behind our products, and support our customers with comprehensive training and expert technical assistance. When you have questions, our dedicated sales support is available to provide answers and to help make your job easier.





Often out of sight, even a small population can cause substantial structural damage. It's estimated that more than 20% of all fires are caused in part by rodents chewing through live electrical wires.<sup>6</sup>

#### **Rodents and the Damage They Cause on Swine Farms**

#### Adverse effects on feed

Rodents pose many threats to productivity and efficiency on swine farms. They consume and contaminate large amounts of food sources, especially stored food and feed. An adult rat can eat and contaminate more than 100 kilograms annually of stored grains and feed.³ At first glance, those amounts might seem small, but over time, even a small rodent population of 200 rats will likely eat and contaminate 20 tons of feed annually. At an average price of €275 per metric ton, that's €5,500. With feed accounting for 60% to 75% of farm operating costs, the loss of 20 tons of feed per year can dramatically effect operations. In the United States alone, rodents eat or contaminate more than \$2 billion, or €1.82 billion, in feed each year.⁵

#### Transmission of infectious diseases

Beyond feed loss, rodents pose a major risk to food safety and disease spread. Rodents are known to carry 45 diseases and 200 human pathogens<sup>2</sup> often transmitted to swine and even to humans and non-targets such as birds and pets. They transmit disease-causing organisms via their droppings, feet, fur, urine, saliva, and blood. According to studies conducted in Europe, an infestation of 100 rats will produce one tonne of droppings and 500 litres of urine, which will cause feed spoilage and will likely transmit diseases.<sup>6</sup> In particular, the largest rodent-related disease threat to animal health, food safety and overall farm biosecurity is Salmonellosis, an infection caused by *Salmonella* bacteria.

Rodents are contributors of disease spread from farm to farm too. Through infected swine manure, rodents can contaminate the food and water designated for healthy swine several hundred feet away. Hungry rats have been observed to travel 2km at night which further increases the disease risk between pig units in areas of high pig density. This type of activity can introduce a disease to nearby uninfected houses increasing the transmission of infectious diseases and creating a biosecurity threat.

#### Structural damage and destructive fires

Property damage is another costly problem instigated by rodents. Rodents chew through walls for better access to food and breakdown insulation and building materials and take it back to their burrows. This affects the structural integrity of walls, floors and ceilings while creating more entry points for birds and other wildlife seeking food and shelter.

The most significant threat to a swine facility is a fire. It is estimated that the annual cost from rodent threat in the UK exceeded £50 million and they were responsible for causing 20 percent of all fires due to electrical faults. Rodents have demonstrated time and again that given enough time, they are a destructive force to be reckoned with and should not be ignored or taken lightly.

#### **Rodent Behaviours and Physical Characteristics**

Rats generally live outdoors and invade swine farms looking for food and water sources. Mice generally live within the swine environment protected from the extreme heat in summer and the bitter cold of winter. Regardless of the facility, swine farms and facilities can support large rodent populations attracting three different types of rodents which have distinct physical features and habits:

- Rattus rattus Ship rat, black rat, roof rat, fruit rat
- Rattus norvegicus Norway rat, brown rat, wharf rat, sewer rat
- Mus musculus House mouse

The most effective control measures can only be adequately planned once the rodent(s) population(s) has/have been correctly identified. The table below provides physical and behavioural information about the three species of rodents that most commonly infest and cause damage to swine facilities.



#### above:

If rodents are seen during the day the colony may be so well established that they no longer feel threatened foraging in the daylight.

	Rattus rattus	Rattus norvegicus	Mus musculus	
Common names	Ship rat, black rat, roof rat, fruit rat	Norway rat, brown rat, wharf rat, sewer rat	House mouse	
Adult weight	100 - 300 g	150 - 450 g	15 - 30 g	
Length (head + body)	150 – 220 mm	200 – 250 mm	60 – 90 mm	
Length (tail)	180 – 250 mm, longer than head and body	150 - 200 mm, shorter than head and body	80 - 100 mm, usually longer than head and body	
Fur & colour	Smoother and softer than Rattus norvegicus; variable in colour ranging from a rare black colour to grey/grey brown above with a white or pale grey underneath	Rough and shaggy; grey to brown with grey or off white underneath	Variable in colour ranging from yellowish brown to grey above, with a white, grey or pale yellow underneath	
Ears & hearing	Thin, translucent, large and hairless; excellent sense of hearing	Thick, opaque, short with fine hairs; excellent sense of hearing	Large with some hairs; excellent sense of hearing	
Eyes & sight	Large and prominent; poor sight, colour blind	Small; poor sight, colour blind	Small; poor sight, colour blind	
Snout, smell and taste	Pointed; excellent sense of smell and taste	Blunt; excellent sense of smell and taste	Pointed; excellent sense of smell and taste	
Droppings	Scattered; spindle or banana-shaped, about 12 mm long	In groups, but sometimes scattered; ellipsoidal capsule shaped, about 20 mm long	Scattered; rod shaped, 3-6 mm long	
Habits & habitat	Nests mainly in walls, roof voids, vines and trees; however, can develop extensive burrows; active, agile climber; rarely found in sewers; rather more erratic and unpredictable in habit than Rattus norvegicus	Does burrow; lives outdoors, indoors and in sewers; nests in burrows; can climb, though not agile; very good swimmer; conservative, somewhat predictable in habit; will avoid unfamiliar objects, e.g. bait trays, placed on runs, for some days; creatures of habit; will leave regular runs to and from feeding areas	Sometimes burrows; lives indoors and outdoors but is almost unknown in sewers; nest generally within stored materials but may burrow; climbs; erratic in habit; inquisitive toward new objects	
Feeding habits	Omnivorous, mainly fruits, nuts, grains and vegetables; consumes 25 – 30 grams per day, drinks water or eats food with high water content; range 30 metres when looking for food	Omnivorous, more likely to eat meat than Rattus rattus; consumes up to 30 grams per day, drinks water or eats food with high water content; will hoard food for future consumption; most likely to eat at night; range 50 metres when looking for food	Nibbles; prefers cereals; consumes 3 grams per day; unlike rats, can survive with very little water and often obtains sufficient water in food without the need to drink; range 1.5 – 5 metres when looking for food	
Lifespan	6 – 12 months	6 – 12 months	6 – 12 months	
Sexual maturity	2 – 3 months 2 – 3 months 1 month		1 month	
Litter size	5 – 10 7 – 12 (up to 18) 4 – 6 (up to 12)		4 - 6 (up to 12)	
Reproduction rate	5 – 6 litters per year	About 6 litters per year	About 11 litters per year	

# Selontra® Rodent Bait

## Success by the numbers.

3x	Controls infestations in as little as seven days— three times faster than most anticoagulant baits	
100%	Controls 100% of rodents—even highly-resistant rats and mice species	
30%	Stop-feed technology controls rodents using 30% less bait while reducing waste	
4x	Selontra® rodent bait is four times more palatable than most rodenticides and 13.2 times more than maize silage	
<	Lower acute toxicity to birds, resulting in a much lower risk of secondary, non-target poisoning	
-18°c	Withstands bitterly cold climates as low as -18° Celsius	
77°c	In extreme hot, humid environments, Selontra® rodent bait does not melt, seep or spoil like many other rodenticides	
3	Suitable for three different applications: burrows, fence lines, and bait stations	

Selontra® rodent bait is wrapped in clear foil with perforated holes, allowing rodents to get the scent of the bait. Rodents like to gnaw, tear and even sharpen their teeth on plastics, so the material is attractive to them. The wrap also provides a layer of protection against unintended mishandling.

#### Selontra® Rodent Bait Overview

Selontra® rodent bait is an innovative solution that offers several unique advantages for swine producers. It is attractive and highly palatable to rodents, which increases its effectiveness in locations where other appealing food sources are readily available. In trials, Selontra® rodent bait was 13.2 times more palatable than maize silage, 4.3 times more palatable than animal feed and more palatable than other leading rodenticides. Population control can be achieved in as little as seven days, which is up to three times faster than anticoagulant rodenticides.

The active ingredient in Selontra® rodent bait is cholecalciferol: a naturally occurring substance that is lethal to rodents in higher concentrations. Due to its unique mode of action, the development of resistance to cholecalciferol in rodents is considered highly unlikely; no cases of cholecalciferol resistance have been reported globally. Selontra® rodent bait is a soft block formulation using patent-pending technology, which delivers the unique advantages of cholecalciferol in a highly palatable bait matrix that rodents will readily consume. This novel formulation remains stable and effective in dry environments and across both hot and cold temperature extremes.

Selontra® rodent bait contains an innovative stop-feed technology that causes rodents to lose their appetite and stop feeding faster than most competitive products. This allows for just enough bait for a lethal dose to be consumed, making Selontra® rodent bait up to 30% more efficient than many anticoagulant rodenticides. Subsequently, less-dominant rodents are able to feed sooner, allowing for population control to be achieved after as little as two bait applications. Conventional anticoagulant baits may require up to six bait applications to deliver similar results. Selontra® rodent bait significantly saves time and labour while reducing the damage caused by rodents.

Due to the unique mode of action, Selontra® rodent bait does not pose the same site and stock contamination and residue risks associated with other rodenticides. Selontra® rodent bait poses a much lower risk of primary poisoning for pigs and a much lower risk of secondary non-target poisoning. Selontra® rodent bait also contains safeguards to help prevent accidental consumption by humans: a warning dye and the bittering agent Bitrex®, which is used in a concentration that is undetectable to rodents but acts as a human taste deterrent. Producers can feel confident that they are achieving the best level of control, while minimising risks to the site, stock and non-targets.







Selontra® rodent bait significantly saves time and labour as control can be achieved in as little as two bait applications.

#### **Steps for Complete Rodent Control**

Sustainable rodent control requires an Integrated Pest Management (IPM) strategy be developed and implemented around the site. Follow the Selontra® rodent bait procedures for baiting placements and use effective application techniques to ensure optimal rodent control and mitigation. This includes maintaining proper site hygiene, implementing harbourage reduction measures, installing rodent-proofing measures and preventing access to alternative food and water. BASF recommends implementing the following steps to ensure effective, long-term rodent management. Together, they provide a complete rodent control solution.

#### 1. Inspect

- It is important to conduct a thorough inspection of the site. During inspection, find out which rodent species are present, where they are located and how they enter key structures. Consider which site conditions and activities may be conducive to the rodent infestation, and identify areas where rodent-proofing and harbourage reduction may be required. Look for evidence of infestation, such as holes, droppings, footprints, and signs of damage or feeding.
- Sketch plans of the site, marking rodent signs and the proposed placement of potential bait points. Note the degree of access of non-targets to the site. Identify all entry and exit points and document them on your site plan.
- The presence of children and non-target animals, such as pets, livestock and wildlife will influence your choice of baiting control strategies. Keeping them safe should be a top priority.

#### 2. Select

There are multiple measures that need to be put in place to control rodent populations, including chemical treatments. Before selecting a baiting program, consider the following measures to help further control the rodent population.

- Site hygiene measures must focus on ensuring the site is as clean as possible at all times. In particular, stock feed areas should be cleaned regularly, with spillage removed daily. Any areas within the site where feed spillage or stock waste accumulates should be regularly cleaned, and all refuse bins should be adequately sealed and covered. Access to alternative food and water should be prevented.
- Harbourage reduction measures should focus on areas within buildings and away from buildings where rodents take cover or travel through the site. This may include stockpiles, machinery, unused or cluttered storage areas and overgrown vegetation. Rubbish within or near site buildings should be reduced or eliminated where possible. Stockpiles of materials such as soil, rock or organic waste should be removed quickly from the site, as these areas provide attractive harbourage and nesting sites for rodents. Particular focus should be placed on reducing overgrown vegetation (grasses and weeds). Grasses and weeds provide cover for rodents and a high-nutrient food resource, both of which are essential for breeding and reproduction. Therefore, control of vegetation up to at least 3 feet/1 metre away from buildings is recommended. The use of a residual herbicide can assist with these types of harbourage reduction measures.
- Rodent-proofing is an integral component of any Integrated Pest Management (IPM) strategy. Rodents can gain access to structures by gnawing through timber, mild steel or plastics. As a general rule, rats can gain access through a hole the size of an adult human thumb, while mice can gain access through a hole the size of an adult human little finger. Holes may be rodent-proofed using steel wool, sheet metal or wire mesh or cement. Pay particular attention to feeding troughs and feed silos.

#### 3. Treat

Rodenticides must be handled responsibly and in compliance with label instructions while taking humans, swine, non-target animals, and the environment into consideration. The information below provides the recommended application techniques for using rodenticides. Please refer to the approved product label in your country for specific use information.

- To reduce the risk of primary poisoning and animal stock contamination, all rodenticides must be placed in burrows or at covered and protected bait points or in bait stations. Bait stations which include bait-securing rods are recommended.
- The recommended placement of bait points is no greater than 10 metres apart for rats and no greater than 2 metres apart for mice.
- Place bait points around structures with particular focus on areas where evidence of rat/ mouse activity is seen. It is also recommended to place a baiting point on each side of every doorway where rodents are likely to enter.
- Bait points may also be placed around buildings, providing a first line of defense.
- For severe infestations, use the highest-recommended number of bait blocks with the highest density of bait placements. Refer to the product label for specific baiting instructions that may apply to your location in your country.

#### 4. Follow-up

- Inspect all bait points 1-2 days after the first bait placement.
- If bait is completely consumed at a bait point, double the dosage when re-applying bait. In such situations, using the highest label rate of 8\* bait blocks per bait location for rats or 2 blocks per bait location for mice is recommended to ensure bait is maintained at that location.
- If no bait has been consumed at a bait point for an extended period of time, consider moving that bait point to another location. These strategies will ensure optimum control in the shortest time. Continue to inspect bait points regularly. Note that if an insufficient amount of bait is placed at any time of the treatment, suboptimal results may occur. Continue placing bait as needed.



Eliminating overgrown vegetation and controlling clutter are essential steps in reducing rodent harbourage sites.



Downtime is the best time to control rodent infestations. Unfortunately, most anticoagulant baits can take far more time, up to 28 days, to gain control.

Selontra® rodent bait controls populations in as fast as seven days, fitting downtime schedules.



One key is to immediately provide a lethal dose to dominant rodents so the rest of the colony gains access to the bait more quickly.

### **Identifying Rodent Activity**

#### Surveying the farm and facilities

Conducting a thorough visual inspection of the facility is just as important as applying control measures. Prior to visiting the location, go to an online mapping program and enter the physical address of the operation. View the facility from a bird's-eye view to give you a good overview of the property size, number of structures and potential areas where rodents may be active. Print out the image and take it with you to the site, or take your digital tablet to assist you with surveying the property. Use this information as you develop a strategy to control and eventually eliminate rodents in your swine environment so the business can be the most operationally fit: from biosecurity health to a healthy bottom-line.

As you conduct a thorough inspection of the site, look for rodent signs listed below, both indoors and outdoors.

Signs of Rodents		Rodents are nocturnal and feed mainly at night so they are rarely seen. The following are signs that rodents are present.	
	Sightings	Rats are generally more nocturnal than mice and are not usually seen during daylight hours. Older, less dominant rats in large populations may look for food during the day as they cannot compete for the food at night. An observation of foraging rats during the day can be an indication that a large infestation may be present.	
-	Gnawing Damage	The double gouge marks of rodent twin incisors are easily identified. The relative size of the teeth gouges can give a clue to the species.	
	Tracks	Noticeable paths along exterior walls, in vegetation, or rodent footprints and tail marks in sand or dust indicate a problem. Rodent movement patterns can be detected by using tracking dust or light sand.	
	Burrows	Burrows are holes in the ground that lead to a rodent's nest. The burrow entrance is typically up to 10 cm wide and is commonly found under buildings, patios, compost mounds, bolt holes, wood piles, low vegetation and accumulated heaps of rubbish. More often than not the burrow will be near a water source.	
	Nests	Mouse nests are usually discovered accidentally when opening or removing some item from the storeroom. They are often found inside boxes (empty or not) or under materials and equipment that are rarely disturbed. They are also fond of nesting in warm places such as in the motor compartment of some equipment. The nest will comprise of shredded materials found in and around the building.	
A. W. C.	Droppings	New droppings usually, but not always, look fresh, dark, and are somewhat pliable. Older droppings are usually duller and easily broken. The best way of determining the existence of a current rodent problem is to remove any droppings and then check the same spot again a few days later for new droppings.	
*8	Food Debris	Food debris, such as partially chewed food or empty nut shell cases, can be indicators of rodent activity. Rats tend to eat all the food they find, but will still leave inedible food stuffs such as nut shells. Mice often leave partially eaten food behind.	
	Rodent Stains	Rats that have become established in a facility often leave faint dark greasy stains where they commonly travel (e.g., hole into a wall). A little training and some experience will help a person to recognize rodent stains in a restaurant.	
S CO	Sounds	Rodents may be heard, but not usually. Occasionally, if it's very, very quiet, gnawing, scratching, squeaking, fighting, or other faint sounds may sometimes be heard.	

#### **Application Techniques**

Selontra® rodent bait must be handled responsibly and in compliance with label instructions while taking humans, swine, non-target animals, and the environment into consideration. The information below provides the recommended application techniques for Selontra® rodent bait. Please refer to the approved product label in your country for specific use information.

- To reduce the risk of primary poisoning and animal stock contamination, Selontra® rodent bait must be placed in burrows or at covered and protected bait points or in bait stations. Stations which include bait-securing rods are recommended.
- The recommended placement of bait points is no greater than 10 metres apart for rats and no greater than 2 metres apart for mice, which are the same baiting guidelines for anticoagulant baits.
- Place bait points around structures with particular focus on areas where evidence of rat/ mouse activity is seen. It is also recommended to place a baiting point on each side of every doorway where rodents are likely to enter.
- If crop fields are adjacent or run parallel to your farms, you may need to place more stations around the buildings in those areas, especially during times of harvest.
- Bait points may also be placed around buildings, providing a first line of defense.
- The recommended number of Selontra® rodent bait bait blocks to be used per bait point is between 2-8\* for rats and 1-2 for mice. For severe infestations, use the highest-recommended number of bait blocks with the highest density of bait placements. Refer to the product label for specific baiting instructions that may apply to your location in your country.
- Selontra® rodent bait may control rodent populations in as little as seven days, provided that sufficient bait for the size of the infestation is placed on the first day of treatment.
   Inspect all bait points 1-2 days after the first bait placement. Important application note:
   Using seven bait blocks per station on days 1 and 2 is important to achieving control in as few as seven days. Under-baiting may lead to suboptimal results.
- If bait is completely consumed at a bait point, double the amount when re-applying bait. In such situations, using the highest labeled rate of eight bait blocks per bait location for rats or two blocks per bait location for mice is recommended to ensure bait is maintained at that location.
- If no bait has been consumed at a bait point for an extended period of time, consider moving that bait point to another location. These strategies will ensure optimum control in the shortest time.
- Continue to inspect bait points regularly. Note that if an insufficient amount of bait is placed at any time of the treatment, suboptimal results may occur. Continue placing bait as needed.



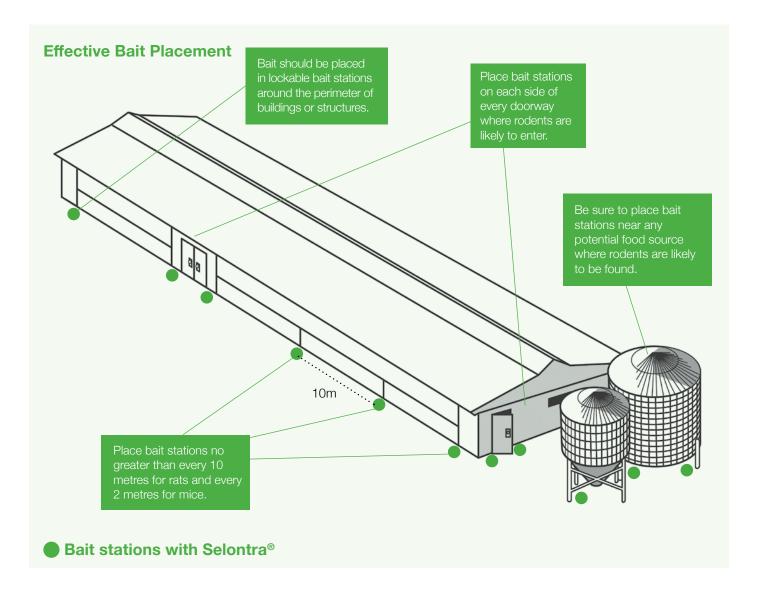


#### above:

Lay baits systematically along runs between nests and feeding sites with the appropriate bait amounts and bait points according to label. Always protect non-targets using bait boxes, or covering bait so that it is only accessible to the target.

#### **Application Techniques** (Cont.)

- Containers that have held bait should not be used for any other purpose. Break, crush or puncture empty containers and dispose of in accordance with local requirements.
- Collect and dispose of all dead rodents throughout the treatment. At the end of the treatment collect remaining bait and dispose of in accordance with state, territory and local guidelines, regulations, ordinances and laws.
- Long-term rodent management is achieved only with a continued, well-managed program. It is therefore imperative that a complete rodent control program with adequate site inspection, site hygiene, harbourage reduction, rodent-proofing and baiting measures is maintained all year-round. If crop fields are adjacent or run parallel to your farms, you may need to place more stations around the buildings in those areas, especially during times of harvest.





## **Ten Steps to Stewardship**

The following steps are sound, quick-reference stewardship advice that is easy to remember and should be shared with all appropriate individuals involved in your pest control program.

- **1.** Have a planned approach once the site has been properly assessed.
- **2.** Document the quantity of bait used and where it is placed.
- 3. Use the appropriate number of baiting points.
- 4. Look for and dispose of rodent bodies.
- **5.** Be extremely careful to prevent access to bait by non-target animals and birds.
- 6. Always inspect and replace bait as the label directs.

- **7.** Remove all remains of bait once treatment has been completed.
- **8.** Ensure that if bait stations are used, they comply with local requirements.
- Have emergency contact information readily accessible as found on the label in case non-target animals exhibits symptoms of poisoning.
- **10.** Always comply with all country, state and federal statutory laws and regulations found on the label.

#### **Safety and First Aid Measures**

Please refer to the approved product label in your country for more specific safety, stewardship and first aid measures.

**Safety Instructions** 

- Avoid contact of the product with eyes and skin. Protective gloves should be worn when handling the product.
- Do not eat, drink or smoke while working with the product.
- After using the product, remove protective clothing and wash hands with soap and water.
- Use additional protective equipment or handling precautions as required by local conditions, ordinances or laws.

Storage

Store in closed original container in a cool, dry, well-ventilated area. Do not store in direct sunlight. Store in a locked room and away from children, animals, food and feedstuffs and products with an odour.

#### **Disposal**

Dispose of old or unused bait safely as per label directions and in accordance with appropriate state, territory and local guidelines, regulations, and laws.

#### **First Aid Measures**

- Rinse exposed skin immediately with soap and water.
- If in eyes, rinse with plenty of water for 15 minutes and seek medical advice if symptoms persist.
- If swallowed, contact a poison control centre or doctor immediately for treatment advice.
- Treat symptomatically. Treatments include a low calcium diet, high salt and fluid intake and avoidance of exposure to sunlight while monitoring calcium levels.

# 24-Hour Emergency Advice Telephone Numbers/Country:

Phone number

In the event of any adverse effects, below is treatment information for physicians and veterinarians.

#### Note to Physician

Cholecalciferol causes hypercalcaemia. Treat symptomatically. Treatment would include a low-calcium diet, high salt and fluid intake and avoidance of exposure to sunlight. Monitoring serum calcium levels may aid treatment. Cortisone has been used successfully in some cases. If clinical signs develop, treatment consisting of saline diuresis combined with the use of furosemide, corticosteroids and phosphate binders is recommended.

#### **Treatment for Pet or Non-Target Animal Poisoning**

Call veterinarian immediately if a pet or other non-target animal consumes this product.

#### Note to Veterinarian

Calcium Mobilizer Cholecalciferol: If clinical signs develop, treatment consisting of saline diuresis combined with the use of furosemide, corticosteroids and phosphate binders is recommended. Calcitonin or pamidronate may be needed for animals that remain hypercalcaemic despite symptomatic treatments.

#### **Reduced Risk to Non-Targets**

Studies demonstrate that cholecalciferol has a favourable toxicological profile to non-target animals when compared with other rodenticides. The likelihood of adverse exposure to non-target animals via secondary poisoning is extremely limited. Available secondary poisoning studies repeatedly demonstrate minimal adverse effects to non-target animals.

Overall, when used as labeled, Selontra® rodent bait poses significantly reduced risks to non-target species when compared with leading anticoagulant rodenticides.

#### Poisoning Symptom Information/Injury Reporting

To obtain information on symptoms of poisoning or if you have concerns about using Selontra® rodent bait, please contact the appropriate emergency advice line, listed at left.



#### **Innovation for a Better Tomorrow**

In 2050, nearly ten billion people will live on Earth. While the world's population and its demands will keep growing, the planet's resources are finite. Though faced with huge global challenges; BASF sees so many opportunities, especially emerging from chemistry.

To keep pace with the ever-evolving and growing needs of our global customers, we have set out to strengthen our foundation. For example, BASF continues to dedicate substantial resources to drive innovation and sustainable solutions:

- Around 3,000 projects are in our research pipeline
- 10,000 employees are involved in research and development
- 100,000 molecules tested on average for one patent
- Major research centers in Limburgerhof, Germany, Research Triangle Park NC, USA and Thane, India and testing stations in the US, Brazil, Spain, Germany, India, and the Philippines

BASF continues to create chemistry to meet the huge global challenges for a better tomorrow.

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