

DuPont™ Advion™

COCKROACH GEL BAIT

Fast, Thorough Control of a Complete Spectrum of Cockroaches.



DuPont™ Advion™ Unbeatable Results.

Advion™ toxicological profile

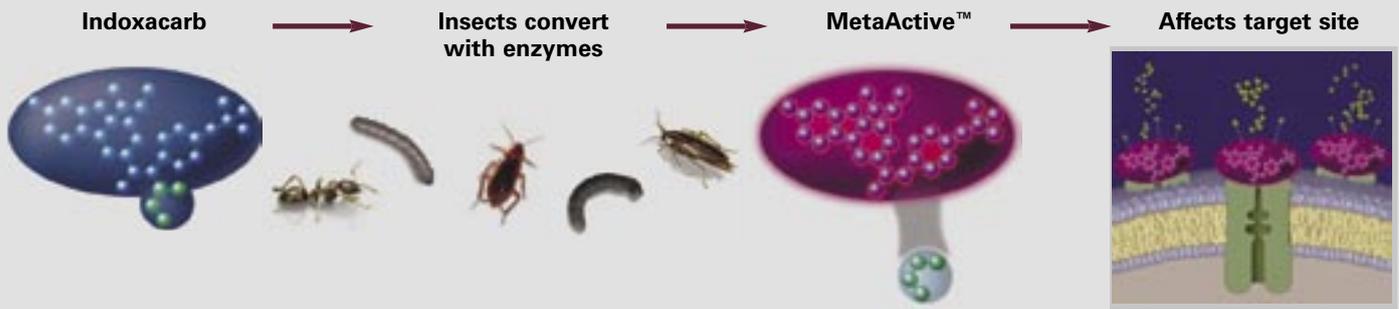
- Indoxacarb received US EPA 'reduced-risk' status
- Rats: acute oral LD₅₀ >5,000 mg/kg (females); acute dermal LD₅₀ >5,000 mg/kg (males/females)
- Not a carcinogen/oncogen, teratogen or mutagen
- First aid measures require no specific intervention
- Not a skin or eye irritant

DuPont™ Advion™ cockroach gel bait is a new, high-performing product from DuPont Professional Products targeting all pest species of cockroaches. Based on the active ingredient – indoxacarb, Advion™ cockroach gel bait represents the miracles DuPont science can deliver. This unique product, powered by the MetaActive™ compound, combines a novel, high-consumption bait matrix with a potent, non-repellent active ingredient. Cockroaches cannot resist this superior combination and even the toughest populations are quickly controlled.

Active ingredient: Indoxacarb is a member of a completely new class of chemistry, the oxadiazines, the latest technology from DuPont Professional Products. New chemistry and a novel mode of action eliminate concern for cross-resistance to existing insect control options, making Advion™ an excellent complement to any integrated pest management (IPM) program. With its low-use rate and excellent environmental and toxicological profiles Indoxacarb has gained 'reduced risk' classification by the US EPA, providing a truly unique combination of performance benefits for pest management professionals (PMPs).



The miracles of science™

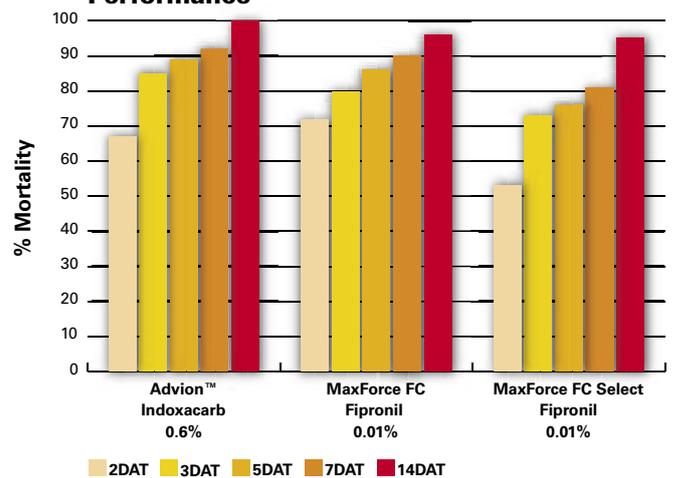


MetaActive™ compound: Indoxacarb offers a unique mode of action compared to other active ingredients. Metabolic activation is the process in which an insect’s own internal enzymes change the molecular structure and attributes of indoxacarb. During this process, insects cleave off the carbomethoxy group from indoxacarb, converting it into MetaActive™. Normally, molecular degradation reduces the efficacy of insecticides. The opposite is true with indoxacarb; the metabolic activation process actually increases its effectiveness. The MetaActive™ compound is the more powerful form which attacks the insect’s nervous system resulting in paralysis, followed by death.

Complete pest spectrum: DuPont™ Advion™ cockroach gel bait is designed to be effective on all major pest species of cockroaches, including, but not limited to: German (also gel bait-averse), American, Australian, Brown, Smokybrown, Brownbanded, Oriental and Asian.

Laboratory trials represented by Chart 1 are indicative of the type of performance achieved with Advion™. Results presented here demonstrate entire colony elimination of the difficult to control American cockroach in a laboratory study that would challenge any commercial bait product. After just five days, Advion™ delivered greater than 90 percent colony control, which included adult males, adult females and nymphs of all stages.

Chart 1
Gel Baits – American Cockroach Performance



Response of large laboratory colonies of American cockroaches to gel baits. Source: Independent contract or university research

Five cockroach behaviours

- **Primary consumption of the bait**

- **Dispersion of bait to another cockroach via contact**

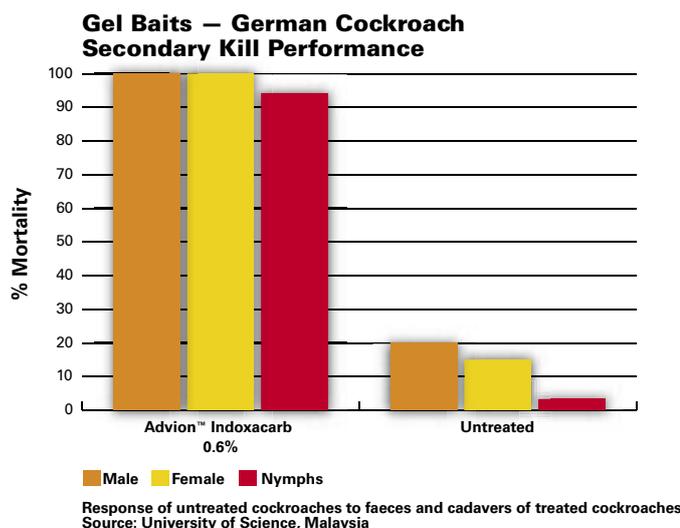
- **Coprophagy — a cockroach eats the faeces from primary cockroach**

- **Necrophagy — a cockroach eats another cockroach that died from ingesting Advion™**

- **Emetophagy — a cockroach devours regurgitant from primary cockroach**

Exponential control: A primary cockroach is exposed to DuPont™ Advion™ through the direct ingestion of the gel bait, and further cockroach population management can be achieved through secondary and tertiary effects. This secondary and tertiary control occurs through normal cockroach behaviour. MetaActive™ may be distributed through these behaviours providing exponential control for the entire infestation. Chart 2 demonstrates the results that can be achieved with DuPont™ Advion™ through secondary exposure. This laboratory trial compares the level of exponential control achieved when untreated cockroaches were exposed to faeces and cadavers of Advion™ treated cockroaches versus the untreated check.

Chart 2



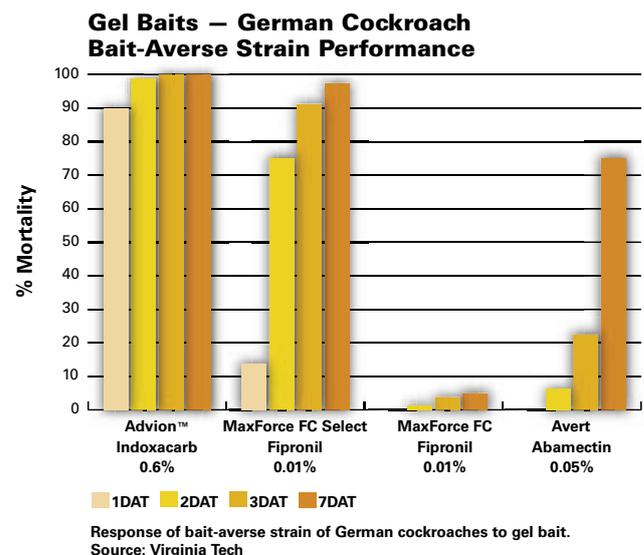
Gel bait-averse populations: In recent years, the popularity and use of gel baits has led some populations of German cockroaches to become averse to current formulations. Essentially, cockroaches avoid the gel bait and do not eat it, causing control failure.

Advion™ cockroach gel bait is designed to overcome this current phenomenon. The formulation for Advion™ was developed with technology to specifically overcome the gel bait-aversion behaviour exhibited by these tough cockroach populations (Chart 3).

Because the basis of gel bait-aversion behaviour is a form of resistance, DuPont Professional Products is committed to monitoring any change in response in field populations to assure PMPs of superior performance, not just today, but for years to come.

Formulation: As with all bait formulations, Advion™ is a combination of an active ingredient, a carrier and an attractant. Advion™ cockroach gel bait contains 0.6 percent indoxacarb. The remaining carrier and attractant system is a complex proprietary blend of ingredients that all pest species of cockroaches find very appealing. These formulation components each serve a purpose: the carrier and attractant, known as the bait matrix, lure the insect into consuming the toxicant, while indoxacarb actually controls the insect population.

Chart 3



Human health concerns regarding cockroaches:

Cockroaches present a threat to human health and are designated by the US EPA to be on the List of Pests of Significant Public Health Importance in accordance with FIFRA 28(d). The chart below is an excerpt from the US EPA issued Pesticide Registration (PR) Notice 2002-1.

Common name	Taxonomic name	Public Health Importance
Cockroaches	Blattodea	
American cockroach	<i>Periplaneta americana</i>	Allergies, transmission of
Australian cockroach	<i>Periplaneta australasiae</i>	<i>Salmonella</i> , faecal
Brownbanded cockroach	<i>Supella longipalpa</i>	contamination, hepatitis
German cockroach	<i>Blattella germanica</i>	
Oriental cockroach	<i>Blatta orientalis</i>	

Public health concerns emphasize the importance of fast, thorough cockroach control. Cockroaches typically live and breed in unsanitary areas, becoming vectors of pathogenic organisms and are often associated with the human food poisoning agent, *Salmonella*. In addition to food contamination risks, cockroaches can be a significant contributor to allergens found in living quarters. In fact, German cockroaches and the allergens they produce have been identified as the leading cause of asthma in urban youth.

Application sites: DuPont™ Advion™ can be applied in residential, institutional, public, commercial and industrial locations. These areas include, but are not limited to, residential buildings, schools, laboratories, hospitals, nursing homes, restaurants, warehouses, motels, hotels, food-handling establishments, food-processing plants, supermarkets and modes of transportation such as aircraft, trains, ships and buses.

Application placement: In order to be effective, baits need to be found, preferred and eaten by the target pest. To make baits accessible, PMPs should locate active sites of the population and target bait placement close to the obscure, tight spaces preferred by cockroaches. Gel bait should be applied as small spots in many locations to provide all foraging cockroaches maximum opportunity to encounter the bait. After application, the attractiveness of the bait formulation will draw the cockroaches in to feed. Advion™ cockroach gel bait is designed to out-compete many of the existing food items cockroaches may encounter in their foraging area. Once located, Advion™ is consumed rapidly by cockroaches.

Directions for use: Advion™ cockroach gel bait can be applied as a crack-and-crevice treatment to specific areas indicative of cockroach activity. Typical harbourage sites include cracks between elements of construction, such as wall corners and under sinks, behind kitchen appliances, equipment legs and bases or around plumbing pipes and wall voids. Each gel bait placement should be applied as a 0.1 gram spot or about 5 mm in diameter. For light infestations, apply at least two spots per square metre. For heavy infestations, apply up to five spots per square metre. In some cases a small thin bead (2.5 mm wide by 5 cm long) may be appropriate.

Storage: Advion™ gel bait is made of food-grade materials. Exposure to extreme heat can affect the palatability of the bait to cockroaches. It is best to store Advion™ gel bait at room temperature (20° to 25°C).

Cleanup: Under most field conditions, the targeted cockroach population should consume most, if not all, of the applied bait leaving little remaining deposit. Additionally, Advion™ has been carefully designed to enable easy cleanup of any material applied to unintended surfaces. In most situations, warm soapy water will remove undesired material leaving no stain.

For more information:

To learn more about DuPont™ Advion™ cockroach gel bait, please call Dr Phil Ridley, Asia Pacific Business Manager, DuPont Professional Products on +61 2 9923 6021 or visit us at proproducts.dupont.com

This reference guide is based on US data and is not intended as a substitute for the product label for the products referenced herein. Product labels for the above products contain proper precautions, directions for use and product warranty and liability limitations that must be read before using the product. Applicators must be in possession of the product label(s) at the time of application. Always read and follow all label directions and precautions for use when using any pesticide.

DuPont™ Advion™ fire ant bait and DuPont™ Advion™ cockroach gel bait are not registered/available in all countries.

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