

四大品牌防蟲滴頸用品成份列表

Ingredient of Fleas and Ticks Drops of four brands

本文章原意：讓各位了解各牌子防蟲成份之功用及其副作用（如有），並非介紹哪種品牌最好/最差。

本文先列出各牌子成份、所佔比例，再列出各成份之功能及其副作用（如有），副作用之內容主要參考及抄錄自 <http://www.greenpaws.org/products.php/better.phpclose>，如大家有興趣，可於家出找出各滅蟲用品檢視一下其成份。

* 本人非任何專業翻譯或修讀化學，只是將網上所搜集之資料湊併一起，再粗略翻譯，如有錯誤，請各位不吝賜教。謝謝! ☺

	Hartz	K9 Advantix	Frontline Plus	Revolution
(S)-methoprene ^{Note 1} ○			11.8% ○	
Fipronil ^{Note 3} △△			9.8% △△	
Selamectin ^{Note 4} △				7.4 - 14.2% △
Pyriproxyfen ^{Note 1} ○		0.44% ○		
Imidacloprid ^{Note 5} △		8.8% △		
Permethrin ^{Note 2} ☹☹☹	85.7% ☹☹☹	44% ☹☹☹		
Isopropyl alcohol ^{Note 1} ○				72.5 - 85.6% ○
Other ingredients*	14.3%	46.76%	78.4%	0.2% - 20.1% (Dipropylene glycol methyl ether ¹ ○ and Butylated hydroxytoluene (保鮮用) etc)
Producer 生產商	Hartz mountain	Bayor	Merial Limited	Pfizer

○ 只能用在化學控制情況下
Use only when chemical control is needed

☹☹☹ 避免使用
Avoid to use

△ 需謹慎使用及遠離孕婦及小童 (個別成份的影響請參考附註)
Use sparingly and avoid if pregnant or around young children (please refer to notes)

△△ 需謹慎使用及遠離孕婦及小童 (有可能致癌成份)
Use sparingly and avoid if pregnant or around young children (possible human carcinogen)

* 其他成份所佔的比例相當大，故此未能了解該驅蟲劑的真正成份

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Notes 附註:

1. Insect Growth Regulators (methoprene, pyriproxyfen (Nylar™), fenoxycarb)

作用 Function:

Insect Growth Regulators (IGR's) differ from traditional flea product ingredients because their main activity is against the immature forms of the flea, not the adults. IGR's mimic juvenile growth hormone, a substance that keeps the flea from developing. Normally, juvenile growth hormone decreases over time and the flea eggs and larvae mature. IGR's keep this development from occurring and the immature fleas fail to molt and they die. Insect growth regulators are found in products such as K9 Advantix® II, Bio Spot® Defense Spot On® for Dogs, and Bio Spot Defense Spot On® for Cats. Because IGR's do not kill adult fleas, it is important to make sure that the product you are using also contains an adulticide.

GREEN PAWS 建議: Use only when chemical control is needed

S-Methoprene (PRECOR, vIGRen, [Isopropyl (2E, 4E, 7S)-11-methoxy-3,7,11-trimethyl-2,4 dodecadienoate])

S-Methoprene is an Insect Growth Regulator (IGR), meaning that it halts the growth of chitin, the substance that creates the exoskeleton in insects. IGRs are effective against developing insects but not against adult insects with already developed exoskeletons. Because of this, IGRs are used to prevent an extended infestation. Since mammals do not produce chitin, insect growth regulators have little effect on humans. 對人類有較少影響 According to EPA S-Methoprene has a very low acute toxicity 根據 EPA 指出，S-Methoprene 含有非常低的嚴重毒性.^{1,2}

S-Methoprene is listed as a **least-toxic** chemical control by the *Integrated Pest Management Practitioner*.⁴⁵ It is listed on City and County of San Francisco Integrated Pest Management Program 2007 Reduced-Risk Pesticide List.⁴⁶ And it is listed on EcoWise Certified IPM Program Materials List.⁴⁷

2 Pyrethroids (permethrin, phenothrin, etofenprox, fenvalorate)

作用 Function:

Pyrethroids are synthetic relatives of natural pyrethrins. They are made in a laboratory and have a longer-lasting effect than pyrethrins. Examples of pyrethroids include permethrin (found in K9 Advantix II) and etofenprox (found in Bio Spot Defense Spot On for Dogs). Pyrethroids are often used in the environment to kill and repel ticks, fleas, lice, and mosquitoes. Many pyrethroids cannot be used on cats, so be sure to check the label for safety. Etofenprox (Bio Spot Defense Spot On® for Cats) is a pyrethroid that is labeled safe to use on cats.

GREEN PAWS 建議: Avoid Use

Etofenprox is one of a class of synthetic chemicals, called pyrethroids, that are derived from natural chemicals found in chrysanthemums. The synthetic varieties are significantly more potent and persistent than naturally occurring products. Etofenprox also disrupts the endocrine system, specifically thyroid hormone, and is toxic to the developing nervous system. Etofenprox, like other pyrethroids is known to be very toxic to cats 其毒性對貓兒有害, causing muscle tremors, seizures, salivation, vomiting and even death. Veterinarians caution against using pyrethroid containing products if there are cats in the home 獸醫警告家中飼養貓兒的飼主，應避免使用 pyrethroid 產品。

Permethrin is one of a class of synthetic chemicals, called pyrethroids, that are derived from natural chemicals found in chrysanthemums. The synthetic varieties are significantly more potent and persistent than naturally occurring products, and permethrin has been classified by EPA as "likely to be carcinogenic to humans 可人類致癌."³⁷ Permethrin is also suspected to disrupt the endocrine system 疑影響內分泌系統.³⁸ Exposure to permethrin may cause numbing, tingling, 麻木刺痛 or burning sensation on one's skin 或皮膚有灼傷感覺. Permethrin is known to be very toxic to cats 其毒性對貓兒有害, causing muscle tremors, seizures, salivation, vomiting and even death.³⁹ Veterinarians caution against using permethrin containing products if there are cats in the home 獸醫警告家中飼養貓兒的飼主，應避免使用 pyrethroid 產品。⁴⁰

3. Fipronil – 被視爲人類可致癌物

作用 Function:

Fipronil (found in Frontline, Frontline Plus, FiproGuard, and PetArmor is the most commonly used ingredient in a relatively new group of synthetic insecticides called arylheterocycles. These compounds block the passage of chlorine through cells in the insect's nervous system, causing paralysis. In Frontline, Frontline Plus, FiproGuard and PetArmor, fipronil is mixed with an oil carrier, and collects in the sebaceous (oil) glands of the skin, then is slowly released. Because of this, it is water-resistant. Fipronil gives excellent protection against ticks, and adult fleas, but does not prevent flea eggs and larvae from developing. For protection against all stages of the flea life cycle, we recommend Frontline Plus, which contain fipronil plus the Insect Growth Regulator methoprene, described above.

GREEN PAWS 建議: Use sparingly and avoid if pregnant or around young children (Fipronil is considered a possible human carcinogen)

Fipronil is considered a possible human carcinogen 被視爲人類可致癌物。²² It also blocks a neural pathway responsible for preventing excessive stimulation resulting in over-excitation of the nervous system in both insects and humans.²³ Fipronil binds less readily with mammalian nervous receptors than insect receptors, reducing its toxic effect in humans.²⁴ Signs of poisoning from fipronil may include sweating, nausea, vomiting, headache, abdominal pain, dizziness, agitation, weakness, and tonic clonic seizures.²⁵ When exposed to sunlight, fipronil breaks down into a compound nine to ten times as potent as fipronil itself.²⁶ Studies have shown that fipronil residues from pet fur can get transferred onto a wipe or a child's hand. 研究指出 fipronil 可經由寵物的毛髮轉移到被擦過物件或小孩的手。²⁷ Fipronil is also suspected to disrupt the endocrine system. Fipronil 亦懷疑會影響內分泌系統。²⁸

Fipronil is listed as a **least-toxic** chemical control by the *Integrated Pest Management Practitioner*.⁴⁵ It is listed on EcoWise Certified IPM Program Materials List.⁴⁷

There are significant health concerns associated with fipronil but in areas with severe tick problems limited and careful use may be warranted. 對使用 fipronil 仍存在健康疑問，但若只用作嚴重的牛碑問題及小心使用也可以的

Fipronil 對狗狗的副作用：

- *Skin problems* 皮膚問題 – As stated earlier, fipronil can cause irritation to your dog's skin. This irritation can go beyond simple itching as the scratching can cause ulceration and open sores. 可能會刺激到狗狗皮膚，令狗狗感到痕癢而去抓，最後令皮膚潰瘍及發炎疼痛
- *Nervous system damage* 損害神經系統– Fipronil is a neurotoxin, causing damage to the fleas' nervous system. It can have the same effect on your dog, causing symptoms such as convulsions, body twitches, loss of appetite, unsteady gait and other effects. Fipronil 是一種可以傷害蟲子神經系統的毒素，亦同樣對閣下的狗狗有同樣的傷害，可引起抽搐、痙攣、減低食慾、步代不穩及其他症狀。

Fipronil – 被視為人類可致癌物 (cont'd 續)

- *Carcinogen* 致癌 – Fipronil has been shown to cause [thyroid cancer](#) in dogs. Because of its carcinogenic qualities, it is important for the person applying the Frontline product to thoroughly wash their hands with soap and warm water to adequately remove the product from their skin. Fipronil 曾證實可引致狗隻甲狀腺癌，因為有致癌物質的存在，故此人類使用 frontline 產品後必需以肥皂或皂液及暖水完全地清潔雙手，以洗走皮膚上的殘餘物。
- *Organ damage* 損害器官 – Autopsies have shown an accumulation of fipronil in canine livers and kidneys, causing an increase in organ weight. Fipronil has also been shown to alter the levels of hormone secreted by the thyroid gland. 解剖狗隻屍體時展示出 fipronil 會累積於狗隻肝臟及腎臟，令器官增加負荷。Fipronil 亦證實會改變甲狀腺釋出之荷爾蒙水平。
- *Infertility* – Fipronil has also been shown to have an effect on a dog's fertility. Its use has led to smaller litter size, difficulty in conception, decreased litter weights and increase in litter deaths 防礙成長。

Read more: [Side Effects of Fipronil \(Frontline\) for Dogs - VetInfo](#)

<http://www.vetinfo.com/side-effects-fipronil-frontline-dogs.html#b>

4. Selamectin

作用 Function:

Selamectin is the active ingredient in the prescription product Revolution. Selamectin kills parasites by blocking nerve signal transmission. Revolution is absorbed through the skin and enters the bloodstream, where it protects against heartworm disease. It passes into the gastrointestinal tract where it kills certain parasites, and passes onto the hair and skin providing protection against fleas, and certain types of mites and ticks.

GREEN PAWS 建議: Use sparingly and avoid if pregnant or around young children

Selamectin is a relatively new insecticide and little information exists on its toxicity.仍很新的一種殺蟲劑，對其毒性只有少數資料。 However, early evidence suggests that Selamectin has very low toxicity in mammals and chemically similar compounds have not been found to be carcinogenic. 據早期研究，其使用對哺乳動物只存在相當低的毒性，其化學元素並未指出有致癌可能¹⁹ Measurable transfer of residues from fur has been detected²⁰ and further safety evaluations are needed. Selamectin is listed as a **least-toxic** chemical control by the *Integrated Pest Management Practitioner*.⁴⁵

使用 revolution 可能引致的副作用：

1. Drooling 流口水: *The First of the Main Side Effect*

Drooling is most likely to occur if a dog licks the area following the dosage or the medication is accidentally given orally instead of topically. The excessive drool may cause stomach upset 胃部不適, so you may need to keep the dog calm and quiet for a day while the nausea passes.

2. Diarrhea 肚瀉: *Sometimes Appearing with Blood*

Diarrhea occurred in less than one percent of the dogs given regular doses of Revolution. Some dogs had bloody diarrhea 某些狗會瀉血, while others simply had diarrhea. If it occurs, switching your dog to a diet of bland chicken and rice for a couple days should ease any digestive upset.

3. Hair Loss at Medication Site 落藥位置脫毛

In the area where the Revolution topical liquid is placed, some dogs develop skin irritation. They may lose hair in that specific areas. This side effect tends to be more common in cats, but it is worth monitoring.

Because Revolution contains alcohol, it can dry the skin causing irritation. If this occurs, the irritation should only last a few days.

Selamectin (cont'd 續)

4. Vomiting 嘔吐: Key Sign of Revolution for Dogs Ingestion

If Revolution is accidentally ingested by a dog, drooling is one of the signs you'll see. [Vomiting](#) is a clear sign of accidental ingestion. If this occurs, you should immediately seek veterinary advice.

5. Incoordination 不協調: Signs of an Overdose of Selamectin 過量使用 Selamectin 的現象

Lack of coordination occurs in about one percent of the pets given Revolution for dogs. Signs of incoordination include muscle tremors, difficulty moving around, leaning or pushing against walls or dizziness. 包括肌肉抖震、活動出現困難、傾側步行或倚牆而行或暈眩

Read more: [5 Side Effects of Revolution for Dogs - VetInfo](#)

5. Imidacloprid

作用 Function:

Imidacloprid (found in [Advantage II](#) and [K9 Advantix II](#)) interferes with the nerve conduction system of insects, by blocking the insects' nerve receptors. It kills fleas but does not have activity against ticks. Therefore, the dog product [K9 Advantix II](#) also contains an ingredient (permethrin) that works against ticks. Advantage II may be used on cats or dogs, but K9 Advantix II should NOT be used on cats.

GREEN PAWS 建議: Use sparingly and avoid if pregnant or around young children

Imidacloprid disrupts the nervous system of sucking insects and may be toxic to the human nervous system as well. 影響昆蟲神經系統及可能對人類神經系統有害 It more readily binds to nerve receptors in insects than animals, reducing its toxic effects in humans.⁶ Imidacloprid is classified by EPA as "Group E—Evidence of non-carcinogenicity for humans. EPA 把 Imidacloprid 列為第 E 組—並非人類致癌物"^{7,8} Signs of toxicity in rats include lethargy, respiratory disturbances, decreased movement, staggering gait, occasional trembling, and spasms.⁹ Imidacloprid is listed as a **least-toxic** chemical control by the *Integrated Pest Management Practitioner*.⁴⁵ It is listed on City and County of San Francisco Integrated Pest Management Program 2007 Reduced-Risk Pesticide List.⁴⁶ It is listed on EcoWise Certified IPM Program Materials List.⁴⁷

本文章資料參考自以下網站：

Reference:

Read more: [Active Ingredients of Frontline Plus | eHow.com](http://www.ehow.com/list_5768414_active-ingredients-frontline-plus.html#ixzz292y4lwZm) http://www.ehow.com/list_5768414_active-ingredients-frontline-plus.html#ixzz292y4lwZm

https://www.revolution4dogs.com/PAHimages/msds_us/RV.pdf

<http://www.greenpaws.org/products.php/better.phpclose>

<http://www.vetinfo.com/side-effects-fipronil-frontline-dogs.html#b>

http://www.amazon.com/Possible-side-effects-with-Frontline/forum/Fx2ZCY3MQK9INEA/Tx2RINQTKGGPHH/1/ref=cm_cd_naredir?encoding=UTF8&asin=B0002J1FLW&cdItems=25&store=generic

<http://www.vetinfo.com/5-side-effects-of-revolution-for-dogs.html#b>