SAFETY DATA SHEET
APEX PLUS™ FOR DOGS

1. IDENTIFICATION

Product name:	**Apex Plus™ for Dogs**
Product type:	Insect growth regulatory (IGR)
EPA Registration No.:	53883-351
Chemical name of active ingredient(s):	**Fipronil:** 5-amino-1-(2,6-dichloro-4-(trifluoromethyl)phenyl)-4-((1,R,S)-(trifluoromethyl)sulfinyl)-1-H-pyrazole-3-carbonitrile **S-Methoprene:** 2,4-Dodecadienoic acid, 11-methoxy-3,7,11-trimethyl-,1-methylethyl ester, (2E,4E,7S)-
Manufacturer/Registrant:	Control Solutions, Inc. 5903 Genoa-Red Bluff Pasadena, TX 77507
For fire, spill, and/or leak emergencies, contact Chemtrec:	Phone: 1-800-424-9300
For medical emergencies and health and safety inquiries, contact SafetyCall:	Phone: 1-866-897-8050
Poison Control Center	Phone: 1-800-222-1222

2. HAZARDS IDENTIFICATIONS

OSHA HCS CLASSIFICATION (29 CFR 1910.1200)

Acute Toxicity:

	Acute oral	Acute dermal	Acute inhalation	Eye irritation	Skin irritation	Skin Sensitization
Category	4	NC	NC	2A	NC	NC

NC: Not classified

Specific Target Organ Toxicity (Single Exposure) – Category 1

Specific Target Organ Toxicity (Repeated Exposure) – Category 1

Aquatic Hazard (Acute) – Category 1

Aquatic Hazard (Long-term) – Category 1

SIGNAL WORD: DANGER

HAZARD STATEMENTS:

- Harmful if swallowed
- Cause serious eye irritation
- Cause damage to organs (CNS) with single exposure and through prolonged or repeated exposure
- Very toxic to aquatic life with long lasting effects

PICTOGRAMS:

PRECAUTIONARY STATEMENTS:

- Wash hand thoroughly after handling. Do not eat, drink or smoke when using this product. If swallowed: call a poison center or doctor if you feel unwell. Rinse mouth.

- Wash hands thoroughly after handling. If in eyes: rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: get medical advice.

- Do not breathe vapors/mist/spray. Wash hands thoroughly after handling. Do not eat, drink or smoke when using the product. Get medical advice if you feel unwell.

Contact SafetyCall® International for emergency medical treatment at (866) 897-8050.

STORAGE AND DISPOSAL: See Section 7 and 13.

OTHER HAZARDS: See Section 11 and 12.

3. COMPOSITION/INFORMATION ON INGREDIENTS

COMMON NAME	CAS NO.	%	OSHA PEL	ACGIH TLV	OTHER	NTP/IARC/OSHA (Carcinogen)
Fipronil	120068-37-3	5 – 10	NE	NE	NE	NA
S-Methoprene	65733-16-6	5 - 10	NE	NE	NE	NA
2-(2-Ethoxyethoxy) ethanol	111-90-0	60 -100	NE	NE	25ppm (8 hours)*	NA

NE=Not established; NA=Not applicable.
*AIHA WEEL.

4. FIRST AID MEASURES

FIRST AID	
IF SWALLOWED:	• Call a poison control center or a doctor immediately for treatment advice. • Have person sip a glass of water if able to swallow. • Do not induce vomiting unless told to do so by the poison control center or doctor. • Do not give anything by mouth to an unconscious person.
IF IN EYES:	• Flush eyes with plenty of water. • Call a doctor if irritation persists.
IF ON SKIN:	• Wash with plenty of soap and water. • Get medical attention if irritation persists.
Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact SafetyCall at 1-866-897-8050 for emergency medical treatment information.	

5. FIRE FIGHTING MEASURES

FLASH POINT: 93.333°C (>200°F)
FLAMMABLE LIMITS: Not available
EXTINGUISHING MEDIA: Use an extinguishing agent suitable for the surrounding fire.

FIRE & EXPLOSION HAZARDS: Toxic vapors will be released if the product is involved in a fire.

HAZARDOUS DECOMPOSITION PRODUCTS: Decomposition products may include carbon dioxide, carbon monoxide, nitrogen oxides, sulfur oxides and halogenated compounds.

FIRE-FIGHTING PROCEDURES: Isolate fire area and evacuate downwind. DO NOT breathe gases, smoke or vapors generated. Fire-fighter should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures
For non-emergency personnel: No action shall be taken involving any personal risk or without suitable training. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For nonemergency personnel".

Environmental precautions : This material is very toxic to aquatic life with long lasting effects. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.

Methods and materials for containment and cleaning up
Small spill : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill: Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

7. HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN IN HANDLING: Do not contaminate water, food, or feed by storage or disposal or cleaning of equipment. Carefully open containers and after partial use close container tightly. Avoid contact with skin, eyes or clothing. Avoid breathing spray mist. Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash before reuse.

PRECAUTIONS TO BE TAKEN IN STORAGE: Do not remove tube from the pack until ready to use. Store in a cool [below 77°F (25°C)] dry place inaccessible to children and pets. Do not refrigerate. Protect from direct sunlight.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

INDIVIDUAL PROTECTION MEASURES:
EYE PROTECTION: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

HAND PROTECTION: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

BODY AND SKIN PROTECTION: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Appropriate footwear and any additional skin protection measures should be

selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

RESPIRATOR REQUIREMENTS: Use a properly fitted, air-purifying or supplied air respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

VENTILATION: Whenever possible, adequate ventilation should be used to minimize the need for personal protective equipment.

HYGIENE MEASURES:
Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

EXPOSURE GUIDELINES: Refer to Section 3.
ENGINEERING CONTROLS: If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Pale yellow liquid (Clear)
ODOR: Pleasant (slight)
pH: NA
FLASH POINT: Closed cup > 93.333°C (>200°F)
RELATIVE DENSITY: 1 – 1.04 g/mL
VISCOSITY: 5 to 15 mPa.s (5 to 15 cP) (Dynamic, room temperature)
VAPOR PRESSURE: Not available
SOLUBILITY: Not available
PARTITION COEFFICIENT: Not available
VOC CONTENT: 80.6 (w/v)

10. STABILITY AND REACTIVITY

STABILITY: Stable under normal conditions.
CONDITIONS TO AVOID: None known.
INCOMPATIBLE MATERIALS: Reactive or incompatible with the following materials; oxidizing materials; acids and alkalis.
HAZARDOUS DECOMPOSITION PRODUCTS: Decomposition products may include carbon dioxide, carbon monoxide, nitrogen oxides, sulfur oxides and halogenated compounds.
HAZARDOUS POLYMERIZATION: Will not occur.

11. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY/IRRITATION STUDIES: (FINISHED PRODUCT)
Acute Oral LD_{50} (Rat): > 750 mg/kg
Acute Dermal LD_{50} (Rabbit): > 5,000 mg/kg
Acute Inhalation LC_{50} (Rat): > 30.61 mg/L (vapors)
Eye Irritation: Irritant
Skin Irritation: Mildly irritating
Dermal Sensitization: Not a skin sensitizer

POTENTIL ACUTE HEALTH EFFECTS:
Eye contact: Causes serious eye irritation.
Inhalation: Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
Skin contact: No known significant effects of critical hazards.
Ingestion: Harmful if swallowed. Irritating to mouth, throat and stomach.

REPRODUCTIVE/DEVELOPMENTAL TOXICITY:

Fipronil: Animals studies gave no indication of a developmental toxic effect at doses that were not toxic to the parental animals. No indications of a developmental toxicity or teratogenic effects were seen in animal studies.

S-Methoprene: No known significant reproductive effects or critical hazards.

CHRONIC/SUBCHRONIC TOXICITY:

Fipronil: Signs of toxicity during a 52-week chronic rat feeding study included reduced feeding and food conversion efficiency, reduced body weight gain, seizures and seizure-related death, changes in thyroid hormones, increased mass of the liver and thyroid, and kidney effects.

CARCINOGENICITY:

Fipronil: The EPA has classified fipronil a Group C Possible Human Carcinogen based on laboratory animal studies (increased thyroid tumors in male and female rats). Humans and rats have the same of the mechanism of action which produced fipronil-induced thyroid tumors in the rat; however, the rat appears to be more highly sensitive than humans. Therefore, fipronil-induced rat thyroid tumors are not considered suggestive of a human health risk. None of the remaining ingredients in the mixture are considered to be carcinogenic.

S-Methoprene: No known significant carcinogenic effects or critical hazards.

MUTAGENICITY:

Fipronil: Results from a number of mutagenicity studies with microorganisms, mammalian cell culture and mammals are available. Taking into account all of the information, there is no indication that the substance is mutagenic.

S-Methoprene: No evidence of genotoxic effects of critical hazards.

NEUROTOXICITY:
Animal studies and human pharmacovigilance reports identify fipronil as a neurotoxicant. Signs and symptoms include: sweating, nausea, vomiting, headache, abdominal pain, dizziness, agitation, weakness and/or tonic-clonic seizures.

ADDITIONAL TOXICOLOGICAL INFORMATION: Symptoms of respiratory depression or central nervous system depression (fatigue, lethargy or dizziness) may occur if exposed to bulk volumes of ingredients.

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL HAZARDS: Fipronil and S-Methoprene are marine pollutants, toxic to aquatic organisms.

ECOTOXICOLOGICAL INFORMATION:

Fipronil:

Bluegill sunfish (*Lepomis macrochirus* LC_{50} (96 h) – 0.083 mg/L
Rainbow trout (*Onchorhynchus mykiss*) LC_{50} (96 h) – 0.246 mg/L
Sheephead minnow LC_{50} (96 h) – 0.13 mg/L
Water flea (*Daphnia magna*) NOEL – 9.8 µg/L; LOEL - 20 µg/L
Bobwhite quail LD_{50} - > 11.3 mg/kg

S-Methoprene:
Bluegill LC_{50} (96 h) - 66 ppm
Fathead minnow NOEC (37 d) – 0.048 ppm
Daphnia magna EC_{50} (48 h) – 0.071 ppm

2-(2-Ethoxyethoxy)ethanol:
Fathead minnow LC_{50} (96 h) – 9,650 mg/l
Daphnia magna LC_{50} (48 h) – 3,340 mg/l

ENVIRONMENTAL FATE, PERSISTENCE AND DEGRADABILITY, MOBILITY:

Fipronil: Not readily biodegradable (by OECD criteria).

S-Methoprene: Half-life in soil of approximately 10 days which varies with soil type. Hydrolysis half-life > 4 weeks. Photolysis half-life is < 10 hours.

13. DISPOSAL CONSIDERATIONS

PRODUCT DISPOSAL: The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling empty containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

CONTAINER DISPOSAL: Dispose of product containers, waste containers, and residues according to label instructions and local, state, and federal health and environmental regulations.

14. TRANSPORT INFORMATION

Ground Domestic (DOT): Not regulated for non-bulk packaging.

International transportation:

Vessel (IMDG): UN3082, Environmentally hazardous substances, liquid, n.o.s. (fipronil, S-Methoprene), 9, PG III, marine pollutant

Air (IATA): UN3082, Environmentally hazardous substances, liquid, n.o.s. (fipronil, S-Methoprene), 9, PG III, marine pollutant

15. REGULATORY INFORMATION

FIFRA INFORMATION:
This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information for safety data sheet, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label.

HAZARDS TO HUMANS. CAUTION Harmful if swallowed. Causes eye irritation. Avoid contact with skin, eyes or clothing. Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet.

HAZARDS TO DOMESTIC ANIMALS For external use on dogs only. Individual sensitivities, while rare, may occur after using any pesticide product on dogs. Certain medications can interact with pesticides. Do not treat your dog with more than one pesticide product at a time. Over dosing your dog can result in serious illness and even death. Consult a veterinarian before using on medicated, debilitated, aged, pregnant or nursing dogs. Consult a veterinarian before using on dogs with known organ dysfunction. If your dog is exhibiting signs of and/or is being treated for skin dermatitis, talk to your veterinarian before applying any topical flea and tick control product.

SARA TITLE III CLASSIFICATION:
Section 302: Not applicable.
Section 311/312: Acute health hazard (immediate)
Chronic health hazard (delayed)
Section 313: 2-(2-Ethoxyethoxy)ethanol (CAS # 111-90-0)

CA PROPOSITION 65: Not applicable

CERCLA RQ: Not applicable

RCRA CLASSIFICATION: Under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste.

TSCA STATUS: The ingredients of this product are listed on the TSCA inventory or are exempt.

STATE RTK: NJ, PA: 2-(2-Ethoxyethoxy)ethanol (CAS # 111-90-0)

16. OTHER INFORMATION

HAZARD RATINGS	NFPA	HMIS		
HEALTH:	2	2	0	MINIMAL
FLAMMABILITY:	1	1	1	SLIGHT
REACTIVITY:	1	1	2	MODERATE
			3	HIGH
			4	SEVERE

SDS DATE: 12-17-2014

The information and recommendations contained herein are based upon data believed to be correct. However, no warranty of any kind, expressed or implied, is made with respect to the information contained herein.