1. IDENTIFICATION OF THE SUBSTANCE/PREPARATIONS AND OF THE COMPANY UNDERTAKING

<table>
<thead>
<tr>
<th>Product Name</th>
<th>PREVENTIC® Tick Collar for Dogs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product Description</td>
<td>Plastic collar to protect dogs from ticks</td>
</tr>
<tr>
<td>Manufacturer/Supplier</td>
<td>Virbac AH, Inc.</td>
</tr>
<tr>
<td>Address</td>
<td>P.O. Box 162059</td>
</tr>
<tr>
<td></td>
<td>Fort Worth, Texas 76161</td>
</tr>
<tr>
<td>Phone Number</td>
<td>(800) 338-3659 for Technical Support</td>
</tr>
<tr>
<td>Chemtrec Number (24 hour)</td>
<td>(800) 424-9300</td>
</tr>
<tr>
<td>Emergency Number</td>
<td>(800) 338-3659 for Human and Animal Medical Emergencies</td>
</tr>
<tr>
<td>MSDS Revision Date</td>
<td>October 9, 2014</td>
</tr>
<tr>
<td>MSDS Supersedes Date</td>
<td>January 10, 2012</td>
</tr>
</tbody>
</table>

Material Safety Data Sheet in compliance with OSHA’s Hazcom Standard (29 CFR 1910.1200)

2. HAZARDS IDENTIFICATION

**Emergency Overview**

**CAUTION!**

Avoid contact with eyes, skin and clothing.
Harmful if swallowed.
Keep out of reach of children.
Do not allow children to play with the collar or to suck the collar. Read entire label before each use.

**Routes of Entry**

Eye contact - Skin contact - Ingestion

**Carcinogenic Status**

Not considered carcinogenic by NTP, IARC, and OSHA. See Section 11.

**Target Organs**

Eyes - Skin – Lungs - Liver

**Health Effects - Eyes**

Contact with eyes may cause a soft irritating reaction. Irritation after eye exposure to ground collar material is possible.

**Health Effects - Skin**

Contact with skin may cause a soft irritating reaction. May cause sensitization by skin contact.

**Health Effects - Ingestion**

Harmful if swallowed. May cause lung damage if swallowed. Mild transient sedation after ingestion to ground collar material is possible.

**Health Effects - Inhalation**

No adverse effects expected under normal conditions of use.

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Component Name</th>
<th>CAS Number</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amitraz</td>
<td>33089-61-1</td>
<td>9.0%</td>
</tr>
</tbody>
</table>
4. **FIRST AID MEASURES**

**Eyes**  
Immediately flood the eye with plenty of water for at least 15-20 minutes, holding the eye open. Obtain medical attention if soreness or redness persists.

**Skin**  
If irritation develops wash skin thoroughly with soap and water. Obtain medical attention if redness or soreness persists.

**Ingestion**  
Call a poison control center or doctor immediately for treatment advice. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give anything by mouth to an unconscious person.

**Inhalation**  
No adverse effects expected under normal conditions of use.

**Advice to Physicians**  
Treat symptomatically. Transient sedation or convulsions, ataxia, hyperexcitability, skin irritation has been observed following exposure to the technical active ingredient and emulsifiable concentrates. Transient sedation has been observed in rodents fed ground collar material and transient eye irritation after exposure to powdered collar.

Antidote against amitraz is yohimbine or phentolamine. It is absolutely forbidden to use derivates of atropin. Federal (U.S.A.) law restricts this drug to use by or on the order of a licensed veterinarian.

**Advice to Veterinarian and/or Emergency Clinic**

**TREATMENT PROTOCOL FOR TICK ARREST COLLAR INGESTION BY DOGS**

1. Induce vomiting (Syrup of Ipecac or Hydrogen Peroxide) if vomiting has not occurred.
2. Since amitraz is not a cholinesterase-depressing drug, atropine and/or 3PAM are contraindicated, as are tranquilizers and sedatives.
3. Administer a non-oily laxative (oily-based laxatives may increase the extraction of amitraz from the collar and facilitate greater absorption). An enema to evacuate the colon may be administered about 12-18 hours after ingestion, if diarrhea has not occurred or the laxative does not produce the desired results.
4. Depending on the degree of depression and the veterinarian’s concern (e.g. dog cannot be roused); yohimbine (Yobine, Lloyd Laboratories) may be administered at 0.1 mg/kg intravenously. Since yohimbine’s action is of short duration, it may need to be repeated until the dog’s condition spontaneously improves. Severely depressed animals should be hospitalized with constant supervision.
5. Oral activated charcoal based toxin absorbers may help to bind any released amitraz.
6. If it is suspected that a coiled length of collar may be lying in the stomach or the depression is severe and prolonged, an abdominal X-ray may be indicated. If gastronomy or enterotomy is to be performed (none of the cases so far reported would justify this action), xylazine should be avoided and general anesthetics administered with extreme caution.

**NOTE:** You may also contact the National Animal Poison Control Hot Line is 1-800-345-4735 for emergency medical treatment information for your pet.

5. **FIRE - FIGHTING MEASURES**

**Extinguishing Media**

Use extinguishing media appropriate for surrounding materials.

**Unusual Fire and Explosion Hazards**

Combustible.

**Protective Equipment for Fire-Fighting**

Wear full protective clothing and self-contained breathing apparatus.
5. **FIRE - FIGHTING MEASURES**

   **Specific Fire Hazards:**
   Decomposition products may be a hazard to health. Do not breathe fumes.

6. **ACCIDENTAL RELEASE MEASURES**

   Use gloves to collect spilled materials.
   Do not allow to enter drains of water courses. If product enters drains or sewers the local water company should be contacted immediately.

7. **HANDLING AND STORAGE**

   Avoid contact with skin and eyes. Do not smoke, eat or drink while handling this product.
   Store in original container at room temperature.
   Store away from children and pets.
   Do not store near foodstuffs.
   Do not open until ready to use.
   Wear appropriate protective clothing. Avoid contact with skin, eyes and clothing. Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
   Do not reuse empty pouch or box. Wrap pouch and put in trash collection. When discarding cut off end and used collar, wrap in newspaper and place in trash collection. Dispose of in accordance with all applicable federal, state, and local laws.
   Do not use or store near heat, open flame, sources of ignition or direct sunlight.

8. **EXPOSURE CONTROLS/PERSONAL PROTECTION**

   **Occupational Exposure Standards**
   Exposure limits are listed below, if they exist.
   **Plasticizer**
   \[ VME \text{ ppm} = 5 \text{ mg/m}^3 \]
   **Engineering Control Measures**
   No specific measures necessary. Good general room ventilation is expected to be adequate to control airborne levels.
   **Respiratory Protection**
   Not required under normal conditions of use.
   **Hand Protection**
   Wear suitable gloves during handling the product.
   **Eye Protection**
   Not required under normal conditions of use.
   **Body Protection**
   Not required under normal conditions of use.
   **Hygiene Measures**
   Wash hands thoroughly with soap and water after handling the product.
   Avoid prolonged exposure with the product.

9. **PHYSICAL AND CHEMICAL PROPERTIES**

   | Physical State    | Soft, plastic pet collar |
   | Color            | Beige                    |
   | Odor             | Mild insecticide         |

Revision Date: October 9, 2014
10. STABILITY AND REACTIVITY

   Stability
   Stable under normal conditions.

   Conditions to Avoid
   Heat - high temperatures

   Materials to Avoid
   Strong oxidizers - acids - bases

   Hazardous Polymerization
   Will not occur.

   Hazardous Decomposition Products
   When heated to decomposition, tick collars may produce toxic or harmful combustion products. Do not breathe fumes.

11. TOXICOLOGICAL INFORMATION

   See product insert and/or packaging for additional information.

   Acute Toxicity
   Amitraz:  
   Acute oral LD$_{50}$ (rat) = 600-800 mg/kg
   Acute Dermal LD$_{50}$ (rabbit) > 1600 mg/kg
   Acute Inhalation LC$_{50}$ (rat) > 65 mg/L/6 hours
   Acute Skin Irritation – non irritating
   Acute Eye Irritation – Mild eye irritant
   Acute Skin Sensitization – not a sensitizer

   Inhalation:  CL$_{50}$(rat)/inhalation/6 hours/rat = 65 mg/l
   Skin Contact:  DL$_{50}$(rat) > 1600 mg/kg. May cause weak irritation
   Ingestion:   DL$_{50}$(rat) > 800 mg/kg. A big ingestion may cause: depression of central nervous system, low blood pressure, temperature failing.

   Specific Target Organ Systemic Toxicity (single and repeat)
   At high doses, amitraz can reduce the function of the hypothalamus, which helps regulate the metabolism by controlling hormone release in the body. A daily dose of 200 mg of amitraz per kilogram of body weight for ten weeks causes decreased growth and food consumption

   Serious Eye damage/Eye Irritation
   Amitraz may be irritating to the eyes.

   Skin Corrosion/Irritation
   Amitraz may be irritating to the skin.

   Respiratory or Skin Sensitization
   Amitraz may cause sensitization by skin contact.

   Carcinogenicity
   Long term feeding studies show that amitraz is not carcinogenic in rats. However, it can cause tumors in female mice. Amitraz caused an increase in tumors of the lungs and lymph nodes in female mice, but not males, at 57 mg/kg/day over 20 months. A two-year study of female mice also showed an increase in tumors of the liver (hepatocellular tumors) at 57 mg/kg/day amitraz. Because amitraz causes cancer in female mice, but not male mice or male or female rats, it is unclassifiable as to human carcinogenicity.

   Mutagenicity
   A variety of tests indicate that amitraz is not mutagenic and does not cause damage to DNA.

   Toxicity to Reproduction
   Doses of 200 mg/kg/day of amitraz for ten weeks decreased fertility in male and female rats.
12. ECOLOGICAL INFORMATION

Do not throw into environment. Amitraz is toxic to aquatic organisms and is a weak toxic to bees. However, the quantity of active ingredient which may be released in the environment is negligible.

Mobility
No relevant studies identified.

Persistence/Degradability
No relevant studies identified.

Bio-accumulation
No relevant studies identified.

Ecotoxicity
Fish CL₅₀ (96 h) = 0.45 mg/l
Daphnia CL₅₀ (48 h) + 0.035 mg/l
Seaweed EbC₅₀ = 0.032 mg/l or 0.09 mg/l (48 h)

13. DISPOSAL CONSIDERATIONS

Product Disposal:
Do not contaminate water, food or feed by disposal. Any unused product or waste should be disposed on in accordance with local, state and national requirements. Call your local solid waste agency for disposal instructions.

Container Disposal:
Any unused product or waste should be disposed on in accordance with local, state and national requirements. Call your local solid waste agency for disposal instructions.

14. TRANSPORT INFORMATION

Contact supplier for transport information.

15. REGULATORY INFORMATION

<table>
<thead>
<tr>
<th>US REGULATIONS (Federal, State) and INTERNATIONAL CHEMICAL REGISTRATION LAWS</th>
</tr>
</thead>
<tbody>
<tr>
<td>TSCA Listing</td>
</tr>
</tbody>
</table>
This product contains ingredients that are listed on the EPA Toxic Substance Control Act Chemical Substance (TSCA) Inventory. Amitraz |

| DSL (Canadian) Listing |
This product contains ingredients that have not been verified for listing on the Domestic Substance List (DSL). |

| WHMIS Classification |
This product has not been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and the MSDS contains all the information required by these regulations. |

| MA Right To Know Law |
This product contains the following chemicals on the Massachusetts Right to Know Law: None |

| PA Right To Know Law |
This product contains the following chemicals on the Pennsylvania Hazardous Substance List: None |

| NJ Right To Know Law |
This product contains the following chemicals on the New Jersey Workplace Hazardous Substance List: None |
15. REGULATORY INFORMATION

California Proposition 65
This product contains the following materials which the State of California has found to cause cancer, birth defects or other reproductive harm: Amitraz (33089-61-1)

SARA Title III Sect. 311/312 Categorization
Immediate (acute) Delayed (chronic)

SARA Title III Sect. 313
This product contains the following chemicals that are listed in Section 313 at or above de minimis concentrations: Amitraz

16. OTHER INFORMATION

NFPA Ratings
NFPA Code for Flammability - 1
NFPA Code for Health - 2
NFPA Code for Reactivity - 0
NFPA Code for Special Hazards – 0

HMIS Ratings
HMIS Code for Flammability - 1
HMIS Code for Health - 2
HMIS Code for Reactivity - 0
HMIS Code for Personal Protection -

Abbreviations
ACGIH: American Conference of Governmental Industrial Hygienists
BOD: Biological Oxygen Demand
CAS#: Chemical Abstracts Service Number
FIFRA: Federal Insecticide, Fungicide and Rodenticide Act
IARC: International Agency for Research on Cancer
LC50: Lethal Concentration 50%
LD50: Lethal Dose 50%
N/A: Denotes no applicable information found or available
NTP: National Toxicology Program
OSHA: Occupational Safety and Health Administration
PEL: Permissible Exposure Limit
STEL: Short Term Exposure Limit
TLV: Threshold Limit Value
TSCA: Toxic Substance Control Act

16. OTHER INFORMATION

For further Information call: (800) 338-3659

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