Common Household Hazards

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The good

Silica gel packs

Desiccant packs are included as moisture absorbents. They are found in shoeboxes, electronics, medications and food. Silica gel, one of the most common desiccants, is a white powder or a lustrous granule. Silica gel comes in paper packets or plastic cylinders. Packages of silica gel are attractive to pets because of the rustling noise, and the packages are easy to bat around. Most ingestions will not cause clinical signs, although a mild gastrointestinal upset may occur. If a large amount is ingested, there is potential for osmotic diarrhea occuring. In most cases, the packet will be ruptured and the contents ingested. Ingestion of the intact packet may cause a gastrointestinal obstruction.

Ant and roach baits

Ant and roach baits are common objects found in households. They are also referred to as hotels, traps, or stations. The insecticides used most commonly in these baits are fipronil, avermectin, sulfluramid (n-ethylperfluorooctanesulfonamide), boric acid, indoxacarb and hydramethylnon, all of which are of low mammalian toxicity and present in very low concentrations within the baits. The baits also contain inert ingredients such as peanut butter, breadcrumbs, fats and sugar to attract the insects; these agents are also sometimes attractive to pets. Exposures of pets to these types of ant baits usually do not require decontamination or treatment. Most often, if signs are seen at all, they are mild in nature and self-limiting and consist of vomiting attributed to the inert ingredients rather than the active ingredient. Ingestion of multiple avermectin-based ant baits in a small dog, or ingestion of single ant baits containing arsenic trioxide (rarely available) would be cause for decontamination and monitoring.

Birth control pills

Birth control pills generally come in 28 tablet packs with 21 hormone tablets (estrogen +/- progesterone) and 7 placebo tablets. Most hormone pills contain 0.035 mg of estrogen or less. In general, estrogen doses of less than 1 mg/kg are not of concern. At higher doses, bone marrow suppression may be seen. However, due to the low estrogen content of the pills, estrogen exposure is generally not sufficient to require treatment. Some placebos may contain an iron supplement; elemental iron doses of >20 mg/kg may require decontamination and other treatments.

Glow-in-the-dark sticks and jewelry

Glow-in-the-dark items are popular novelty items that are sold at fairs, carnivals, novelty stores and skating arenas. They are especially common around Halloween and the Fourth of July. These items include glo-sticks and glow-in-the-dark jewelry (necklaces, bracelets, etc.). The primary luminescent agent in these types of products is dibutyl phthalate (n-butyl phthalate), an oily liquid that is also used as a plasticizer and insect repellent. Dibutyl phthalate is of low toxicity (LD_{50} >8000 mg/kg in rats) so serious problems are unlikely.

Even though the extremely unpleasant taste of dibutyl phthalate may limit exposure, some very dramatic signs may be seen. Signs generally occur within seconds of the pet biting into the item. Compared to dogs, cats tend to have a much more exaggerated reaction to the taste of dibutyl phthalate. Cats may display profuse salivation and foaming, with occasional retching and/or vomiting. More dramatic are the behavioral effects in cats from exposure to glow items; signs such as hyperactivity, aggression, head shaking, hiding, and agitation have been reported.

In all cases, signs are generally self-limiting and should resolve once the pet gets the taste of the product out of their mouth. The exposure is managed by diluting the taste of the dibutyl phthalate using milk or highly palatable food (e.g. canned tuna). Any chemical that has gotten on skin or fur should be bathed or wiped off to prevent re-exposure when the animal grooms themselves; taking the pet into a darkened room will aid in identifying the luminescent chemical on the skin or coat

Soaps and anionic/non-ionic detergents

Non-ionic and anionic detergents are found in a wide variety of household products, including body and hand soaps, shampoos, dishwashing detergents, various household cleaners, etc. These products are gastrointestinal and ocular irritants with few to no systemic effects. Clinical signs consist of hypersalivation, vomiting, and diarrhea, and are generally mild and self limiting, although ingestion of large quantities may result in more severe vomiting (+/- blood) requiring veterinary intervention. Protracted vomiting may also cause dehydration and electrolyte abnormalities necessitating parenteral fluid therapy. Aspiration of liquid detergent can cause dyspnea and a chemical pneumonitis.

Management includes symptomatic treatment for gastric upset and parenteral fluid therapy, if indicated. Treat ocular exposures by flushing eyes with room temperature water or sterile saline solution for 5 minutes. While corneal injury is unlikely, if persistent photophobia, blepharospasm, or lacrimation should occur, fluorescein stain of the eye should be performed to rule out corneal erosions or ulcers. For respiratory signs, oxygen and other supportive care may be needed.

Toilet water (tank drop-ins)

Tank "drop in" products typically contain anionic/nonionic detergents, cationic detergents, bleach, and/or acids. However, when a tank "drop in" cleaning product is used in a toilet, the actual concentration of the cleaner is very low in the bowl. With dilution by the bowl water, the cleaning agent is just a gastric irritant. Common signs seen with ingestion include mild vomiting and nausea

Bleach

There are several different types of bleaches. Household liquid bleach is usually 3-6% sodium hypochlorite. Powdered chlorine bleaches generally contain calcium hypochlorite, trichloroisocyanuric acid, or dichlorodimethyhydantoin. These compounds change to hypochlorite when they come in contact with water. Color safe bleaches contain sodium peroxide, sodium perborates, or enzymatic detergents.

The most common signs after exposure are gastrointestinal, skin, eye, and/or respiratory irritation. If the bleach concentration is greater than 6% mucosal burns can develop. Color safe bleaches tend to cause protracted vomiting as they release hydrogen peroxide when they contact water. Inhalation of fumes can cause wheezing, coughing and dyspnea. Remove animals to fresh air. Orally exposed animals should be given milk or water for dilution and monitored for GI upset. Dermal irritation can be seen and animals should be bathed with liquid dish washing detergent until they no longer smell like bleach.

Cyanoacrylate glues

Cyanoacrylates (Super Glue®) solidify when they contact saliva, so minimal absorption occurs in most cases. If glue is on the skin you can try to remove it with mineral/vegetable oil or just let it wear off. No solvents!

Fertilizers

Fertilizers are made up of nitrogen, phosphorus, and potassium (NPK) in various ratios. Each fertilizer may have different concentrations and sources for each of the elements. Fertilizers come in liquid, granular, and solid (i.e. stakes) forms. Fertilizers generally have a wide margin of safety and only mild GI signs are expected after ingestion. Additives to fertilizers may include herbicides, insecticides, fungicides, iron, copper, and zinc. These additions increase the likelihood of GI and systemic signs. If bone or blood meal is not properly stored, it could potentially be prone to bacterial growth. Bacterial gastroenteritis could result from ingestion.

Glyphosate

Glyphosate (Pondmaster®, Rodeo®, Roundup®) is a general use herbicide. It is practically nontoxic by ingestion and dermal exposure. Glyphosate inhibits the shikimic acid pathway and since animals do not have this enzyme, it does not systemically harm them. Surfactants are irritating to the mucous membranes and skin and are responsible for most clinical signs (vomiting, diarrhea, oral irritation).

Glyphosate is poorly absorbed from the GI tract and is largely excreted unchanged in the urine. Urine may kill vegetation due to active glyphosate excretion. It can make toxic plants become much more palatable. Oral ingestions should be diluted with water or a small amount of milk. Large ingestions of the super concentrated glyphosate may result in oral ulcers from the surfactants, and mucosal protectants may be indicated.

Paints

Latex and oil paints can cause mild GI upset if ingested. Some paints contain ethylene glycol, but the amount is negligible (< 10%). Do not use solvents to remove paint from fur.

The bad

Acids

Products containing acids include cleaning agents (e.g. toilet bowl cleaners), anti-rust compounds, etching compounds, automotive batteries, and pool sanitizers. The toxicity of an acid increases with increasing concentrations. Acids produce localized coagulative tissue necrosis and generally produce immediate pain upon exposure, which helps to limit ingestion.

Clinical signs occur almost immediately upon exposure. Oral exposure results in pain, vocalization, dysphagia, vomiting (+/- blood), and irritation or ulceration of oral and/or esophageal mucosa. Lesions often appear milky white to gray initially, then gradually turn black. Esophageal lesions are less common than with alkaline products. Dermal exposure results in dermal irritation or ulceration, accompanied by intense local pain. Ocular exposure may result in corneal erosion or ulceration.

Attempts to chemically neutralize acids with a weak alkali are contraindicated, as this may stimulate an exothermic reaction. Treatment of oral exposure includes immediate dilution with water or milk. Gastric lavage and induction of emesis are contraindicated due to the risk of increasing corrosive injury. Activated charcoal is ineffective for caustic agents and should not be used. Treatment of oral lesions is symptomatic, and should include pain management (opiods), sucralfate slurries to treat oral, esophageal or gastric ulcers; intravenous fluids to maintain hydration; provisions for nutritional support (e.g. gastrostomy tube); and antibiotics if needed. The use of corticosteroids to decrease inflammation and esophageal stricture formation is controversial, as steroids will delay wound healing and may increase susceptibility to infection. Dermal and ocular exposures should be treated with copious flushing with clear

water for 15 minutes. Fluorescein staining of the eyes should be performed, and corneal erosion or ulceration should be treated as needed.

Alkalis

Alkaline products include sodium or potassium hydroxide, ammonium hydroxide, and potassium permanganate. Common sources of alkaline products include drain openers, automatic dishwasher detergents, alkaline batteries, toilet bowl cleaners, swimming pool products and radiator cleaning agents. Agents with pH > 11 are capable of causing significant corrosive injury. Alkaline agents penetrate local tissue rapidly and deeply, causing liquefactive necrosis. Unlike acidic products, very little pain may be evident upon initial contact, which may encourage further contact and ultimately result in more extensive exposures.

Clinical signs may not develop immediately, and it may require up to 12 hours for the full extent of tissue damage to become apparent. Acute signs include depression, hypersalivation, anorexia, oral inflammation or ulceration, dysphagia, vomiting (+/- blood), abdominal pain, and melena. Significant hyperthermia (>104° F) may accompany oral inflammation. Esophageal and/or pharyngeal ulceration may occur. Sequelae can include esophageal perforations or strictures and pleuritis or peritonitis from leakage of ingesta through perforated mucosa.

As with oral acid exposures, emesis should NOT be induced and activated charcoal should not be given. Complete evaluation of the oral cavity for ulceration or irritation should be performed, although with very recent exposures the oral cavity may appear normal. Evidence of oral discomfort and inflammation generally develop within 2 to 4 hours, although the full extent of injury may not be evident until 12 hours post exposure. Endoscopy may be performed in cases in which esophageal damage is a concern. Should mucosal burns develop, treatment is the same as with an acid exposure. Esophageal lesions may take weeks to heal and there is risk of stricture formation, leading to impairment of esophageal function.

Cationic detergents

Cationic detergents are contained in fabric softeners, some potpourri oils, hair mousse, algaecides, germicides and sanitizers. Cationic detergents are more toxic than non-ionic/anionic detergents and can cause extensive systemic and local effects at concentrations as low as 2%. Local tissue injury caused by cationic detergents resembles that seen with exposure to alkaline products (see Alkali section). In addition, cationic detergents can cause systemic toxicity including CNS depression, coma, seizures, hypotension, muscular weakness and fasciculations, collapse, pulmonary edema, and metabolic acidosis; the mechanism of these signs is not known. Treatment of local exposure is similar to that for alkaline products (see Alkali section). Systemic signs should be treated symptomatically (i.e. fluids for hypotension, diazepam for seizures, etc.).

Batteries

Flashlights, remote controls, battery-operated toys, watches, calculators, hearing aids, etc. all provide the opportunity for pets, especially dogs, to be exposed to alkaline or disc batteries. Most alkaline dry cell batteries use potassium hydroxide or sodium hydroxide to generate current. Disc, nickel-cadmium, and silver batteries are generally of the alkaline type. Lithium disc batteries tend to lodge in the esophagus, increasing the risk of esophageal ulceration. In addition, batteries may cause respiratory or gastrointestinal obstruction if inhaled or swallowed.

When batteries are chewed and the alkaline gel is released, liquifactive necrosis results (see Alkali section). Foreign body obstruction may occur when casings are swallowed and disc batteries may be inhaled, resulting in acute dyspnea and cyanosis. Treatment of battery burns is the same as any alkaline product (see Alkali section). In the case of lithium batteries, administration of tap water in 20 ml boluses every 15 minutes has been shown to decrease the severity and delay the development of current-induced tissue injury in dogs. Radiographs to determine the location of the battery should be performed. The decision to remove a battery depends on the size of the animal, the size of the battery, and evidence of battery puncture. Batteries that are small relative to the size of the animal will often pass uneventfully through the GI tract. Bulky diets may assist in passage. If the battery is not seen in the stools within 3 days of ingestion, use radiography to verify the location of the battery. Batteries that have not passed thorough the pylorus within 48 hours are unlikely to do so and may require endoscopic or surgical removal. Endoscopic removal is not recommended in cases where there is suspicion that the battery has been punctured.

Pennies

Ingestion of coins by pets, especially dogs, is not uncommon. Of the existing US coins currently in circulation, only pennies pose a significant toxicity hazard. Pennies minted since 1983 contain 99.2% zinc and 0.8% copper, making ingested pennies a rich source of zinc. Other potential sources of zinc include hardware such as screws, bolts, nuts, etc., all of which may contain varying amounts of zinc. In the stomach, gastric acids leach the zinc from its source, and the ionized zinc is readily absorbed into the circulation, where it causes intravascular hemolysis.

The most common clinical signs of penny ingestion are vomiting, depression, anorexia, hemoglobinuria, diarrhea, weakness, collapse and icterus. Secondarily, acute renal failure may develop. Clinical laboratory abnormalities will be suggestive of hemolysis (elevated bilirubin, hemoglobinemia, hemoglobinuria, regenerative anemia) and may also indicate the development of kidney failure. Serum zinc levels may be obtained—blood should be collected in all plastic syringes (no rubber grommets) and shipped in Royal blue

top vaccutainers to minimize contamination with exogenous zinc. Radiography of the abdomen may reveal the presence of coins or other "hardware" within the stomach.

Treatment for recently ingested pennies would include induction of vomiting. Activated charcoal is not indicated, as it is of little benefit in binding metals. Removal of zinc-containing foreign bodies via endoscopy or gastrotomy/enterotomy may be required. Treatment for symptomatic animals should include blood replacement therapy as needed, intravenous fluids, and other supportive care. The use of chelators may not be necessary in cases where prompt removal of the zinc source is accomplished. If chelation therapy is instituted, careful monitoring of renal parameters is important for the duration of therapy.

Paintballs

Paintballs contain different types of brightly colored paint inside gelatin capsules and appear to be attractive to dogs. Because the balls come in containers holding 500 or more, dogs ingesting paint balls tend to ingest a very large number, although as few as 15 paintballs (in a 90-pound dog) has been associated with toxicity. Technically, the paint balls are "non-toxic" (as listed on the label), as there is nothing in them that will be appreciably toxic if absorbed. Instead, the toxicity seen when dogs ingest paintballs likely comes from the osmotic effect of the ingredients of the paint, which can include propylene glycol, polyethylene glycol and sorbitol. These osmotic agents are thought to pull free body water into the intestine, resulting in hemoconcentration, hypernatremia, and acidosis. Ingestion of paint balls has been associated with vomiting, diarrhea, acid/base imbalances, electrolyte disorders, neurologic signs (fasciculations, tremors, ataxia, seizures), and occasional deaths in dogs. Signs may begin within an hour of ingestion. Management of asymptomatic dogs should include decontamination (emesis followed by an enema), then electrolytes and acid/base status should be monitored. Intravenous fluid therapy (1/2 normal saline or 5% dextrose in water at 2 times maintenance rate) should be instituted in hypernatremic animals. Warm water enemas (50 mL/10 pounds) have been helpful in treating the acute toxicosis from paintball ingestion. Seizures should be managed using diazepam as needed, and metaclopramide hydrochloride may be used to manage vomiting. Most dogs receiving prompt and aggressive care generally recover within 24 hours; dogs whose hypernatremia remains unresolved after 24 hours have a guarded to poor prognosis.

Polyurethane adhesives

Isocyanate glues (Gorilla Glue®, Elmer's ProBond Polyurethane Adhesive®) are expanding wood glues that have been associated with gastric foreign bodies (FB) in dogs. These products contain isocyanates (see Table 1). When ingested (chewing a 2 oz bottle of adhesive has been sufficient) the adhesive polymerizes into a large, friable FB that can form a cast of the gastric lumen. The adhesive is hygroscopic, absorbing water from the stomach as it expands and the warm body temperature may also play a role in expansion. Dogs licking small amounts off of the floor or ingesting paper towels soaked with the product generally had mild, transient GI signs but no FB.

Attempts to dilute recently ingested glues with food or liquids have not prevented FB development. Do not induce emesis due to risk of expanding FB in esophagus. Radiographs can be performed to determine the presence of a FB in the stomach (looks like kibble). Sometimes the FB is large enough to palpate. Evidence of a foreign body has been seen as early as 4 hours post-ingestion, but radiographs at 24 hours post-ingestion are likely to be more reliable. If present, the FB will require surgical removal.

Polytetrafluoroethylene (PTFE, Teflon®)

Although polytetrafluoroethylene (PTFE, Teflon®) is inert under ordinary circumstances, when the polymer is heated under conditions of inadequate ventilation, PTFE fumes may result (see Table 2). Small pet birds are extremely sensitive to chloroflourocarbon fumes, which sensitize the myocardium causing arrhythmias, pulmonary congestion and cardiac failure. With PTFE toxicosis, birds will show respiratory signs immediately. Most die quickly, but some may survive and die later. Environmental conditions and ventilation can be vastly different between rooms and homes. Birds that die may not be in the closest rooms to the PTFE source. Birds that have underlying cardiac or respiratory disease will be more prone than others to experience problems. PTFE is also found in some stain resistant fabrics but it is not dangerous in this form.

The tasty

Bread dough (yeast)

Raw bread dough made with yeast poses mechanical and biochemical threats to animals ingesting it. The warm, moist gastric environment stimulates yeast growth, resulting in expansion of the dough mass and gastric distention. Which, in turn, can result in respiratory and vascular compromise. Perhaps more significant is the release of ethanol from yeast fermentation, resulting in profound metabolic acidosis, CNS and respiratory depression, and, potentially, death.

Early clinical signs may include unproductive attempts at emesis, abdominal distention, and depression. As alcohol intoxication develops, the animal becomes ataxic and disoriented. Eventually, profound CNS depression, weakness, recumbency, coma, hypothermia may occur. Management of exposure includes decontamination and treatment for alcohol toxicosis. Because emesis is often unsuccessful, gastric lavage is initially recommended. Cold water lavage should inhibit the metabolism of the yeast and decrease ethanol production. Treatment for alcohol intoxication consists of intravenous fluid therapy (diuresis enhances excretion), thermoregulation, and cardiovascular and respiratory support. For seizures, diazepam is recommended, but it should be used with care

as it will enhance CNS depression. Anecdotally, yohimbine has been used successfully to help reverse profound coma in dogs. Most animals given prompt, aggressive care will recover within 4 to 24 hours.

Chocolate

There are a wide variety of chocolate and cocoa products to which pets may be exposed, including candies, cakes, cookies, brownies, and cocoa bean mulches. Not surprisingly, the incidence of accidental chocolate exposures in pets occurs around holidays, especially Valentine's Day, Easter, Halloween and Christmas. The active (toxic) agents in chocolate are methylxanthines, specifically theobromine and caffeine. Methylxanthines stimulate the CNS, act on the kidney to stimulate diuresis, and increase the contractility of cardiac and skeletal muscle. The relative amounts of theobromine and caffeine will vary with the form of the chocolate (see Table 3).

The LD_{50}'s for theobromine and caffeine are 100-300 mg/kg, but severe and life threatening clinical signs may be seen at levels far below these doses. Mild signs have been seen with theobromine levels of 20 mg/kg, severe signs have been seen at 40-50 mg/kg, and seizures have occurred at 60 mg/kg. Accordingly, less than 2 ounces of milk chocolate per kg is potentially lethal to dogs.

Clinical signs occur within 6-12 hours of ingestion. Initial signs include polydipsia, bloating, vomiting, diarrhea, and restlessness. Signs progress to hyperactivity, polyuria, ataxia, tremors, seizures, tachycardia, VPC's, tachypnea, cyanosis, hypertension, hyperthermia, and coma. Death is generally due to cardiac arrhythmias or respiratory failure. Hypokalemia may occur later in the course of the toxicosis. Because of the high fat content of many chocolate products, pancreatitis is a potential sequela.

Management of chocolate ingestion includes decontamination via emesis followed by gastric lavage. Because methylxanthines undergo enterohepatic recirculation, repeated doses of activated charcoal are usually of benefit in symptomatic animals. Intravenous fluids at twice maintenance levels will help maintain diuresis and enhance urinary excretion. Because caffeine can be reabsorbed from the bladder, placement of a urinary catheter is recommended. Cardiac status should be monitored via EKG and arrhythmias treated as needed; propranolol reportedly delays renal excretion of methylxanthines, so metoprolol is the beta-blocker of choice. Seizures may be controlled with diazepam or a barbiturate. In severe cases, clinical signs may persist up to 72 hours.

Macadamia nuts

Macadamia nuts are cultivated from Macadamia integrifolia trees commonly found in Hawaii and Australia. Macadamias are a popular nut for snacking, and used in baking as well. Clinical signs are reported at ingestions as low as 2.4 g/kg body weight. No deaths have been reported at this time. Doses of 1 g/kg, or higher, require decontamination. Clinical signs include weakness, depression, vomiting, ataxia, tremors, transient paresis, and hyperthermia. Mild elevations in serum triglycerides, lipase and alkaline phosphatase may be seen, and should return to normal in 48 hours. Treatment of clinical signs includes fluids and thermoregulation. Prognosis of macadamia nut intoxication is good.

Avocados

Species sensitivity among animals varies. In dogs, avocados are likely of low toxicity. At least one report of cardiac failure in dogs exists in the literature although the reliability of the report cannot be guaranteed. In rabbits, inflammation of the mammary glands may be seen. In some bird species, avocado ingestion can lead to myocardial necrosis and failure with respiratory distress, pericardial effusion, and death. Treatment is symptomatic but the prognosis is poor.

Moldy food (tremorgenic mycotoxins)

Tremorgenic mycotoxins produced by molds on foods are a relatively common, and possibly under-diagnosed, cause of tremors and seizures in pet animals. Because of their relatively indiscriminate appetites, dogs tend to be most commonly exposed to tremorgens. These toxins are produced from a variety of fungi, however tremorgens produced by *Penicillium* spp. are the most commonly encountered. These molds grow on practically any food, including dairy products, grains, nuts, and legumes; compost piles may also provide a source of tremorgens. Tremorgens have a several different mechanisms of actions: some alter nerve action potentials, some alter neurotransmitter action, and while others alter neurotransmitter levels. The overall affect is the development of muscle tremors and seizures.

Clinical signs include fine muscle tremors that may rapidly progress to more severe tremors and seizures. Death generally occurs in the first 2 to 4 hours and is usually secondary to respiratory compromise, metabolic acidosis or hyperthermia. Other signs that may be seen include vomiting (common) hyperactivity, depression, coma, behavior alterations, tachycardia, and pulmonary edema.

Asymptomatic animals exposed to moldy foods should be decontaminated via emesis or lavage followed by activated charcoal and cathartic. In symptomatic animals, control of severe tremors or seizures has priority over decontamination. Seizures may respond to diazepam, however others have had better success with methocarbamol (Robaxin®; 55-220 mg/kg IV to effect), especially in seizuring animals. Barbiturates may be used in animals that are unresponsive to other anticonvulsants. Supportive care should include intravenous fluids, thermoregulation, and correction of electrolyte and acid-base abnormalities. In severe cases, signs may persist for several days, and residual fine muscle tremors may take a week or more to fully resolve. Testing of stomach content, suspect foods, or vomitus for tremorgens is available.

Table 1. Common isocyanates

Abbreviation	Chemical name
MDI	diphenyl methane diisocyanate or methylene diphenyl diisocyanate
TDI	toluene diisocyanate
HDI	hexamethylene diisocyanate
IPDI	isophorone diisocyanate
MIC	methyl isocyanate
NDI	naphthalene diisocyanate
PAPI	polymethylene polyphenol isocyanate
PTI	para-tolyl monoisocyanate
DMDJ	hydrogenated MDI, dicyclohexylmethane 4,4'-diisocyanate
Triphenylmethane	4,4',4"-triisocyanate

Table 2.

Temperature (F)	Common Cooking Temperatures
325	Birds died from preheated oven
350	Common baking temperature
396	Temperature of PTFE-coated light bulbs under which Missouri birds died
500	Searing temp for meat in oven or grill
536	Birds killed in DuPont lab experiments
700	Preheated grill
750	Surface of PTFE-coated pan after heating for 8 minutes on conventional stove
1000	Drip pans (gas range)
1500	Broiling temperature for high-end ovens

Table 3. Methylxanthine levels of various chocolates

	Milligrams per ounce	
Compound	Theobromine	Caffeine
White Chocolate	0.25	0.85
Milk Chocolate	58	6
Semi-sweet Chocolate chips	138	22
Baker's Chocolate (unsweetened)	393	47
Dry cocoa powder	737	70

References

Donaldson CW. Paintball toxicosis in dogs. Vet. Med. Vol 98(12):995-997, 2003.

Gwaltney-Brant SM. Chocolate Intoxication. Vet Med. Vol. 96(2): 2001.

Hansen SR. Macadamia Nut Toxicosis in Dogs. Vet Med. Vol. 97(4): 2002.

Horstman CL, Eubig PA, et al. Gastric outflow obstruction after ingestion of wood glue in a dog. JAAHA 39:47-51, 2003.

Kore, AM, Nesselrodt A. Household cleaning products and disinfectants. Vet. Clin. North Am. Small Anim. Pract. Vol. 20(2): 525-537, 1990.

Means C. Bread dough toxicosis in dogs. J. Vet. Emerg. Critical Care 13(1): 39-41, 2003.

Richardson JA, Gwaltney-Brant SM, Villar D. Zinc toxicosis from penny ingestion in dogs. Vet Med. Vol. 97(2):2002.

Richardson JA. Potpourri hazards in cats. Vet Med. Vol. 94(12): 1999.

Rosendale ME. Glow jewelry (dibutyl phthalate) ingestion in cats. Vet. Med. Vol. 94(8): 703, 1999.

Schell, MM. Tremorgenic mycotoxin intoxication. Vet. Med. Vol 95(4): 283-286, 2000.

Tanaka J, Yamashita M, Yamashita M, Kajigaya H. Esophageal electrochemical burns due to button type lithium batteries in dogs. Vet. Hum. Toxicol. Vol. 40(4): 193-196, 1998.