



Pet Safe Deicers – separating facts from fiction

We got a lot of calls asking about pet safe deicers. To answer the question, you must first define the word “safe” and how to quantify that. Safe for paws? Safe for ingestion? Safe for fur?

Most of the claimed “Pet Safe” deicing products on the market today are simply UREA with dye. Urea is a fertilizer macronutrient and contains 46% nitrogen. Most granular fertilizer products contain urea which also called carbamide.

The sole basis for the claim “pet safe deicer” on UREA is based on the stated “LD-50” on the Safety Data Sheet which is a globally harmonized document under a new standard that went into effect in June of 2015 that defines hazards and handling for materials.

The “LD50” is the lethal dose required to kill 50% of the test animals. While that is not something that anyone wants to think about, that *is* the standard established by OSHA for oral toxicity and is the basis for all materials. Another toxicity standard is the LC-50 which is lethal concentration in air and that would apply only to dust particles of the product.

The LD 50 for urea is 11,000 milligrams/kilogram of body weight for mice, and 8471 mg/kg for rats. Rats are the normal standard as they most closely mimic human toxicity levels. That puts UREA about on par with magnesium chloride hexahydrate which carries an LD-50 of 8100 mg/kg.

As far as performance and functionality, urea is not a particularly good deicer at all. It is only effective to about 25° F whereas magnesium chloride dry pellets work to -15° F. Urea does not contain chlorides, however, the only concerns about chlorides generally relate to corrosion of unpainted ferrous metals and as a rule, chloride levels are not of concern in most pets.

With respect to specific species such as dogs, high levels of nitrogen can be very problematic and lead to serious health concerns. https://www.petmd.com/dog/conditions/urinary/c_dg_azotemia_uremia If a dog licks up a sufficient quantity of “pet safe” deicer, they can get enough to be a problem. For cats, the problem is similar. A good resource for pet toxicity of compounds is the Pet Poison Helpline: <http://www.petpoisonhelpline.com/poison/fertilizers/>

Salt, and all of the products containing salt which include Magic Salt, Treated Salt, most blended deicers on the market are all a problem according to the Pet Poison Helpline: <http://www.petpoisonhelpline.com/poison/salt/> So avoid salt products and products that contain sodium chloride, which is also called halite, road salt, table salt, etc.

Potential Effects of Over-exposure on Household Pets

Chloride-based deicers are used extensively around homes during the winter to remove ice and snow from areas where foot traffic is likely, such as on sidewalks and porch steps. Given the number of homes where pets, such as dogs and cats, are present, the potential exists for these valuable members of the family to be exposed to these products. This communication is meant to help the pet owner better understand the potential effects of an accidental over-exposure of a pet to these products.

Realistically, there are three ways a pet can come into contact with chloride-based deicer:

- They can walk on the solid particles or hydrated (liquid) product
- They can consume the product either accidentally or intentionally
- The solid particles/dust may get into their eyes or lodged in paws/fur/etc.



Skin and Footpad Contact

Chloride-based deicers present a low hazard to skin when used as directed, as brief contact is essentially nonirritating. Therefore, single short exposures to the solid particles most likely will not cause a problem to the feet of dogs or cats. However, prolonged (hours) or repeated contact may cause skin irritation, in some cases even a burn. Solid particles may become lodged between toes or caught in the fur surrounding the footpads, which would prolong contact and increase the potential for irritation. In addition, if the product has hydrated (becomes liquid), the salt solution may cause the footpads to become dry and cracked after prolonged contact. Therefore, chloride-based deicers should be used carefully in areas where animals have routine access, or not at all in areas where prolonged contact could occur, such as in a kennel. Owners are advised to inspect and wash their pet's foot pads after any contact to remove any intact solid particles or salt solution. In the unlikely event that severe irritation is observed, a veterinarian should be consulted.

Consumption

With respect to exposure via consumption, most pets probably will not intentionally consume chloride-based deicers. However, it only makes sense to store the product in a manner that eliminates any opportunity for exploring pets to conduct a taste test. If incidental ingestion does occur, it is not likely to cause injury because the toxicity of this product is low. If a pet inadvertently consumes large amounts, gastro-intestinal irritation or ulceration may occur. In this case, vomiting should not be induced, but if it occurs naturally, offer the animal plenty of drinking water and consult a veterinarian.

Eye Contact

To avoid potential eye contact, pet owners are advised to keep pets away when the product is being applied to surfaces. If the product does contact the eyes, some irritation can be expected. The product should be washed out of the eyes if such exposure does occur. If such measures are not taken, the prolonged contact in the eye may result in more extensive injury. A veterinarian should be consulted.

Summary

It's not complicated and it's not rocket science. Be smart about how you manage your pet's exposure to winter snow and ice products. Remember that the only reason we use snow and ice control products is for public safety, so accept a little risk in your life to reduce a huge risk in your life. If you are in the hospital with a broken back from a slip and fall on ice, who will care for your pet? It's a good idea to broom off any excess deicers that are visible on your walkways so that you reduce the chance of concentrated exposure to your pet. When you come in from a pet walk on treated surfaces, take the time to brush off your pet's feet or even give them a quick dip rinse in a shallow bucket and then dry them. Most animals are a lot tougher than people tend to think and can take a fair amount of exposure to the world they cover barefoot and naked 24/7/365. Be smart about how YOU manage your pet and winter and make sure that you carefully read the label and understand that what you might be severely overpaying for in a claimed pet safe product, may well be something you can get for fraction of the cost if just look for the chemical compound that will be effective for your needs and will help minimize your pet's potential exposure.

