

De-icing Materials – Are any safe for Pets and Concrete & Concrete Pavers?

I get this question often, “What can I use to melt the snow and ice on my hard surfaces (concrete walkways, driveways and concrete pavers) that won't harm either these surfaces or my pets?” The answer is rather complicated. Complicated by the fact that for every substance you can use there are those who say don't use them and those that say they are safe to use. So what should a homeowner do?

Some in Canada have suggested you use Pickle Brine! Yes, Pickle Brine! But brine contains salt so I doubt that would be safe for either concrete or your pet's paws. So let's take a look at what is real and is not real here.

What products are used to melt snow and ice? These are the primary products used for this purpose:

- [Sodium Chloride \(rock salt\)](#)
- [Calcium Chloride](#)
- [Potassium Chloride](#)
- [Urea](#)
- [Magnesium Chloride](#)
- [Sodium Acetate](#)
- [Calcium Magnesium Acetate](#)
- Ammonium Nitrate
- Ammonium Sulfate
- [Various blends](#) of the above

Do any of these damage concrete? Well, chemically speaking the only products that react and thus degrade concrete are Ammonium Nitrate and Ammonium Sulfate. The other products listed above do not chemically attack concrete, but can affect the freezing point of water. When the freezing point of water is depressed, the number of freeze-thaw cycles the water goes through can increase. And the expansion of freezing water (hydraulic pressure) can exceed the strength limits of the concrete. Spalling (the chipping and splitting of concrete) can be the result.

So the best and safest method to remove snow and ice is the Sun! Have the sun melt it all off and dry the surface before sundown and Viola, no damage to the concrete no ill effects on your pets! As a practical solution, nah! But if you can use any of these non Ammonium salts to entirely remove the snow and ice and then rinse these chemical off before sundown, technically they are all safe as far as concrete surfaces go. Again, that is not a very practical solution and it does not address the effects on your pet's paws.

Sodium salts should always be avoided. As a metal sodium is very reactive and can damage any metals it comes into contact with including any re-bar used to strengthen the concrete used in your driveway. Also it is very bad for your pet's as it literally can cause chemical burns to their sensitive paws. So **DON'T USE ANY PRODUCT'S CONTAINING SODIUM OR A SODIUM SALT!**

Often you will read that the use salts containing Magnesium or Calcium are a safer alternative

to salts containing Sodium, for both concrete and pets. Yet these salts which contain the metals magnesium and calcium can be ingested by your pet's when they lick their paws to remove them. Whereas a little Calcium or Magnesium in your pet's diet is OK to much can be harmful or create unwanted side-effects. You do realize that the primary ingredient in Milk of Magnesia is Magnesium and that Milk of Magnesia is used to loosen stools!?

What about Urea? One down side is it can have a slight but offensive odor; on the upside sold in 25 lb bags its also the least expensive product. Most one-stomached animals including dogs and cats (and Humans as well?!) tend to tolerate small ingestions of urea. Did you know that Urea is contained in many shampoos and other cosmetics?

So again the question is what should I use? Some so-called "Pet-Safe" de-icers do not contain any salts, such as a product called "Safe-Paw". However, the lowest price I could find for this item came in 35 lb buckets are was available on both Chewy.com and on Amazon for \$64.00 including shipping! Note, most of the so-called Pet-friendly products out there either do no bother to list their ingredients or simply Magnesium or Magnesium/Calcium combination products. We've already talked about how "safe Calcium and Magnesium salts are for your pets.

As any product which can melt snow and ice can increase the number of freeze-thaw cycles the water (in the forms of snow, ice or liquid water) and this increase in the number of cycles of freeze-thaw in itself can damage your concrete

So besides the sun there is no perfect product to use. So what do I recommend. Well, you must consider that falling and slipping on icy surfaces can injure people and possibly get you sued! So if you must use a product that is minimally damaging and irritating to you pets I would use Urea. Fortunately Urea is relatively cheap! You can purchase it cheaply in what I believe are 20 to 25lb bags at the Southern States Home and Farm Store located at 9064 Frederick Rd (near the intersection with St. John Lane) Ellicott City, MD 21043. As a de-icer Urea melts snow and ice to 15 degrees Fahrenheit! Please keep in mind that over application can cause damage to vegetation, so use just enough to get the desired effect which will also minimize the "odor-issue".

If you have any questions about this topic or any other relating to your landscape simply call or write:

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