Reptile Substrate Selection Guide

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There are a number of substrates available for reptiles today. Though marketed specifically for reptiles, many of these substrates may not be safe for use in your reptile's habitat. This is due largely to what can happen when a herp ingests it. Avoid harmful (and potentially life-threatening) gastrointestinal impaction by selecting the right substrate for your reptile.

Impaction

Many reptiles are going to ingest their substrate, either accidentally or purposely. Lizards that "smell" with their tongues (chemoreception) are at the highest risk. When a herp ingests substrate, injury may result as the substrate passes through his system. Many substrates are actually going to get stuck in your herp's intestines. This condition prevents food from getting through, and is known as an impaction.

If a reptile has an impaction, it stops eating. Waste buildup and trapped food behind the impaction starts to rot, causing bacterial infection and gas. Surgery is often needed to remove the impaction, and if it is bad enough, the impaction can actually perforate the gut. An impaction is a very serious, life-threatening condition.

Signs of an impaction include:

- Constipation
- Anorexia (loss of appetite)
- Lethargy
- Vomiting
- Paralysis
- Bruised looking areas on abdomen (if reptile is thin skinned)
- Difficulty breathing
- Dehydration

If the impaction is not treated, the reptile will die.

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Prevent Excess Substrate Ingestion

It is much easier to keep your herp from ingesting substrate than it is to deal with what happens if they do. Here are a few tips on choosing safe substrate and preventing ingestion and impaction.

- **Research your reptile's substrate needs**
  Some substrates are appropriate for all reptiles, while others are only suitable for specific species. Desert species need a drier substrate, while tropical species need substrate that absorbs and holds moisture. Some species will need substrate that allows them to tunnel.

- **Know the particulars of particulate substrates**
  Particulate substrates pose a potential threat for all reptiles. However, it can be especially dangerous for lizards that "smell" their environment with their tongue. Particulate substrates are easily ingested and quickly build up in the stomach or intestines.

  If you think there is a possibility that your herp is going to ingest substrate or you have seen it do it in the past, err on the side of caution and do not use it. Safe alternatives include hemmed Astroturf, indoor/outdoor carpeting, paper towels, butcher's paper, and linoleum. These options provide a flat surface and cannot be ingested.

- **If you use loose substrate, use a feeding dish**
  Allowing your herp to eat its food directly off of loose substrate greatly increases the possibility that it will ingest significant amounts of loose substrate. Always use a feeding dish to minimize the amount of ingested substrate.

- **Consider a secondary feeding enclosure.**
  Setting up a second habitat to be used for feeding is beneficial for a couple of reasons. First, you can use a safe, easy to clean substrate such as linoleum that cannot be ingested. Second, it will also help to keep the main enclosure more sanitary.

Safer Substrate Choices

Many substrates are advertised as being "digestible." However, the only one truly digestible substrate is alfalfa pellets. They break down when wet, but even too many alfalfa pellets eaten at one time can damage the gut or cause an impaction. All other substrates are only able to be passed (hopefully), not digested. Alfalfa pellets should not be used for turtles. Alfalfa pellets have the disadvantage that they can easily grow bacteria and mold.

The safest substrate is hemmed Astroturf or indoor/outdoor carpet. With these

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substrates, there is no chance for impaction because it cannot be ingested. Plus, they can be washed, disinfected, and reused. They are safe for use with all kinds of herps, including terrestrial species, arboreal species, and fossorial species. Newspaper also makes an excellent substrate.

When choosing a substrate for your herp's habitat, always remember that what is most convenient for you is not necessarily the best substrate for your herp. There are many possibilities to choose from, but not all of them are safe for herps, even if they are advertised as such. If you have any concerns about whether or not the substrate you are using is suitable, consult an experienced reptile veterinarian.

Substrate:	Manufacturers Recommend For:
Zoo Med Terrarium Carpet Liners	Bearded Dragons, Chameleons, Desert Geckos, Green Anoles, Iguanas, Land Tortoises, Monitors, Rainforest Geckos, Skinks, Snakes, Swifts, Toads, Uromastyx, etc.
Zilla Terrarium Liner	Bearded Dragons, Chameleons, Desert Geckos, Green Anoles, Iguanas, Land Tortoises, Monitors, Rainforest Geckos, Skinks, Snakes, Swifts, Tegus, Toads, Uromastyx hatchlings, etc.
Zoo Med Eco Earth Coconut Substrate	Day Geckos, Garter Snakes, Pac Man Frogs, Salamanders, Tarantulas, Tree Frogs, etc.
Reptilite Calcium Substrate	Desert Dwelling Lizards, Hermit Crabs, Snakes, Tortoises, etc.
Zoo Med Excavator Clay	Adult Uromastyx, Bearded Dragons, Leopard Geckos, Sand Boas, Swifts, Tarantulas, etc.
Zoo Med Repti Bark	Anoles, Chameleons, Day Geckos, Green Iguanas, Monitors, Tarantulas, Tegus, etc.
Zoo Med Repti Sand	Adult Uromastyx, Aquatic Newts, Bearded Dragons, Hermit Crabs, Leopard Geckos, Soft Shell Turtles, etc.
Zilla Fir and Sphagnum Moss Mix	Frogs, Green Anoles, Rainforest Geckos, Skinks, Snakes, Toads, etc.
Zilla Ground English Walnut Shells	Bearded Dragons, Monitors, Skinks, Tegus, Uromastyx, etc.

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