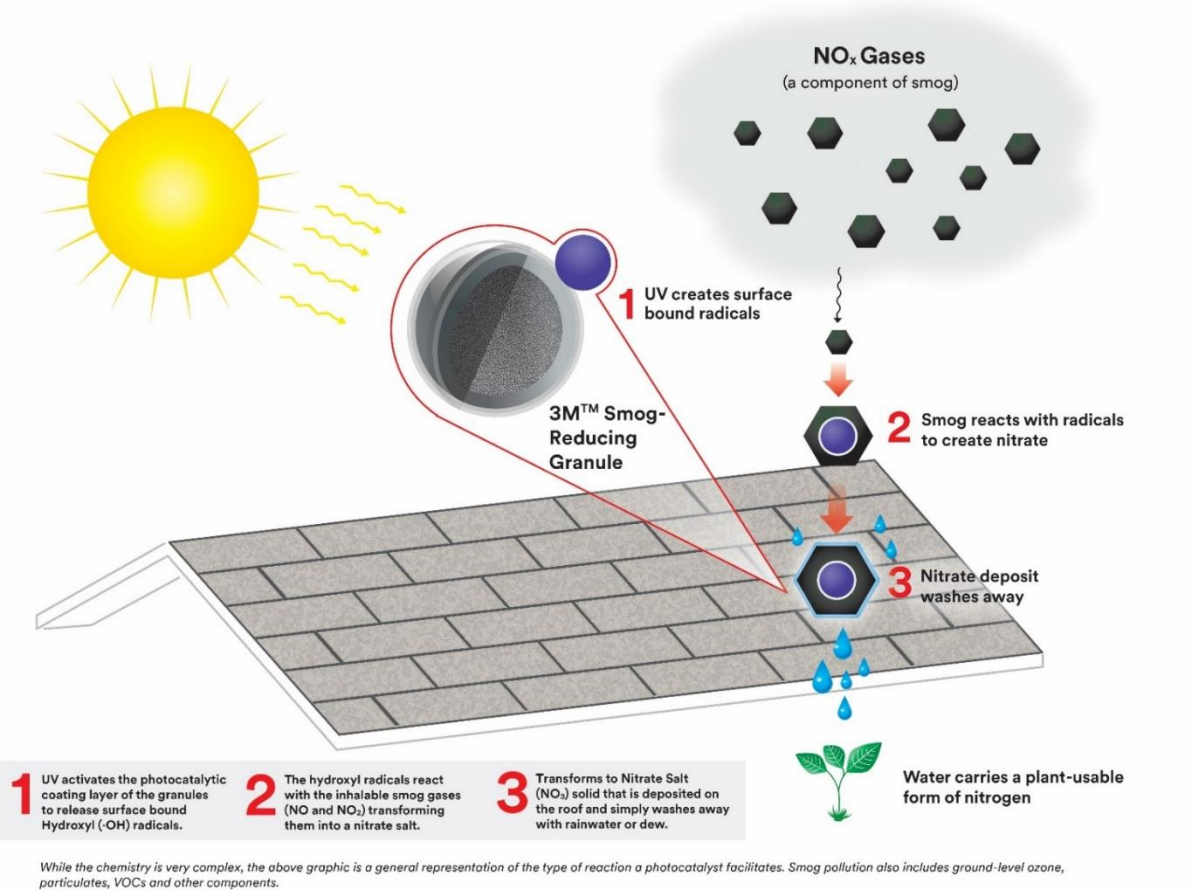
Improving Our Climate

3M™ Smog-reducing Granules

Frequently Asked Questions

Q. How does 3M™ Smog-reducing Granules reduce smog and help improve air quality?



While the chemistry is very complex, the above graphic is a general representation of the type of reaction a photocatalyst facilitates. Smog pollution also includes ground-level ozone, particulates, VOCs and other components.

1. 3M™ Smog-reducing Granules are integrated into the asphalt shingle surface (at a set percentage) as part of the shingle design. The granules blend together with no visual difference and all play their part in protecting the asphalt layer of the shingle.
2. The photocatalytic coating layer of 3M™ Smog-reducing granules generates oxygen (O2) and hydroxyl (■OH) radicals when activated by the sun essentially decomposing NOx gases near the surface.
3. The radicals, around the smog reducing granules, cause the smog gases (the nitrogen oxides in smog) to transform into NO3 which is a plant-usable salt. The salt deposits wash away with rainwater.
4. The catalyst activity is constant when exposed to UV so the smog-reduction activity is a continuous process.

Q. How much of an impact will shingles with 3M™ Smog-reducing Granules make if I use them on my roof?

The average roof using shingles with 3M smog-reducing granules today have the capacity to reduce smog similar to 2-3 trees.

Q. Can I drink the water from the roof run-off?

It is not recommended that any rainwater that has come into contact with roofing materials be collected as potable cistern water for either human or animal usage. Most cisterns do not have a filtration or reverse osmosis system to eliminate the presence of chemical, particulate and biological material. Please refer to federal and local water quality regulations for more information.

Q. What is the result of smog gases being transformed?

The nitrogen oxides in smog are converted into a nitrate salt solid which is a more plant usable form of nitrogen.

Q. Will the nitrate salts be washed off my roof?

Yes. The salt deposits wash away with moisture or rainwater, thus allowing the smog-reducing granules to regenerate and transform more nitrogen oxides in smog.

Q. What happens when nitrates salts reach the ground?

Converting smog gasses into nitrate salts provides nitrogen for plant growth. Nitrate is often the only bioavailable form of nitrogen for plant usage and is essential for plant growth which is why it's the main ingredient in most fertilizers. For the residential shingle application of smog-reducing granules, the most nitrate that could potentially be generated would be similar to the amount of plant food used for a small house plant.

Learn more about 3M™ Smog-reducing Granules.