

Does Not Migrate Out of the Surface

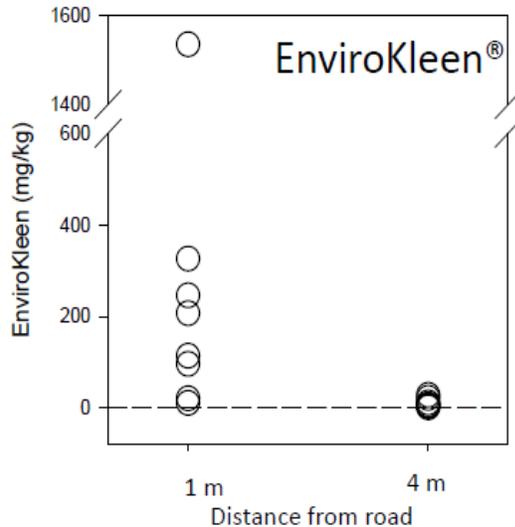
Overview:

Midwest's Semi-Permanent Gravel Runway system is responsible for the performance and longevity of the treated runway. The binder used in EnviroKleen is a polymer with excellent adhesion properties and an extremely high viscosity. The key to its performance is a very high molecular weight. The average molecule in EnviroKleen's binder is 5 times larger than the molecules in the synthetic base fluid. As the product penetrates the surface the binder becomes entangled between soil particles, locking them in place. The base fluid migrates beneath the runway surface over time, but the binder remains in place near the surface. This leads to increased performance and durability not seen with a binderless product.

EK35 uses a different binder than EnviroKleen. EK35's binder not only shares many of the same properties as binders that work through physical adhesion, but it goes a step further by forming chemical bonds with soil particles. This bond is permanent and provides greater strength than physical adhesion alone. When the binder contacts soil particles with a positive surface charge, such as calcium or magnesium-based minerals, carboxylate salts are formed. These salts are extremely insoluble and exist as waxy solids.

Chemical migration testing was performed by the United State Geological Survey (USGS) to determine if EnviroKleen had migrated off the treated surface 1 year after application. Samples were collected at 1 meter and 4 meters from the edge of the treated surface and tested using gas chromatography/mass spectrometer (GC/MS) to quantify the presence of EnviroKleen at each distance.

Test Results:



At 1 meter transect on EnviroKleen treated section, EnviroKleen concentrations were 23 times lower compared to treated areas.

At 4 meter transect on EnviroKleen treated section, EnviroKleen concentrations were 737 times lower compared to treated areas.

Adjacent soil analysis suggests that EnviroKleen was transported from the treated surface by aggregate being thrown from the travel surface.

Conclusion:

Unlike common short-term dust palliatives, EnviroKleen and EK35 do not migrate out of the surface due to the properties of their unique binder systems. By remaining in place, these products produce longer lasting, better performing runway surfaces.