



McKleyson Industries is an exclusive provider of Perma Kleen. We can distribute & even train your personnel on-site or at your facility on how to use this revolutionary product. Contact us at [mckleysonindustries@gmail.com](mailto:mckleysonindustries@gmail.com)

What is Perma Kleen? Perma Kleen is an environmental friendly product that allows us to take advantage of the revolutionary polymerization process known as "London Dispersion". This method enables Perma Kleen to turn ANY (hydrocarbon) into a non-hazardous glass bead (silica) that can ONLY be broken down in an extensive laboratory setting. (It would take 400 degrees and a heavy acid applied together in a lab setting to break down the chemical. This cannot and will not happen in any natural element). Typically within a 24 to 72 hour average, we can take contaminated soil and change it back to its original color while dropping the total petroleum hydrocarbons well below Federal E.P.A. requirements. In turn providing our clients substantial regulatory, financial and ecological advantages;

E.P.A regulatory compliance (Costly fines).

Significant downtime reduction (Days, not weeks, or month long clean ups).

Substantial cost savings over other methods (Less labor, less time).

Eco-friendly and environmentally safe. (Green)

What makes Perma Kleen unique and unlike any other Oilfield Remediation product in the world?



[www.McKleysonIndustries.com](http://www.McKleysonIndustries.com)

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Perma Kleen works on WATER, SOIL AND CONCRETE. Perma Kleen can not be compared to any other Oilfield Remediation product that may claim to be "environmental friendly" because it does not contain Nonyl Phenols (NP) as an ingredient. NP's are banned by the European Union (EU)because they DO NOT biodegrade readily. Perma Kleen has no NP's, it is also NOT a microbial product which can take up to weeks to work affectively.

### Advantages of Perma Kleen

- Anyone can apply the spray on product making it convenient and easy to use.
- Saves the owners a substantial amount of money on all their spills.
- Absorbs all of the hydrocarbons preventing further contamination.
- Produces a glass bead around the hydrocarbon, rendering it harmless to the environment.

Once impacted soil has been treated with Perma Kleen and has gone through the drying process (usually 24 hrs, it produces a white residue, turning the once black hydrocarbon into a non-hazardous silica sand that keeps the appearance of regular dirt. It literally turns the contaminated soil from black to the soil's original color.

Because of the change in color and being able to render the impacted soil harmless and passing all inspections and E.P.A. regulations, nothing can be seen, therefore nothing can be reported.

Perma Kleen Saves companies time and money opposed to "dig and haul" method or the popular Microbial method.



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## **HOW IT WORKS**

Silica Polymerization is the process by which Perma Kleen attracts hydrocarbons where they adhere to the silica surface as the product dries. Hydrocarbons are attracted to the silica through London Dispersion forces, which are the attractive forces that hold nonpolar materials in the liquid and solid states and holds the hydrocarbons in place while the silica polymerizes. Silica can be a very high surface area material that can attract a fairly large volume of material.

Since sodium silicate contains Oxygen (O) atoms, there is also available a lone pair that would be capable of hydrogen-bonding interaction with water molecules in the mixture. The remaining parts of the molecule are hydrophobic and are involved in the London forces or the hydrophobic interactions of the two molecules—that is, the silicates and hydrocarbons.

As the water evaporates from the system, the silicate molecule polymerizes (a chemical reaction which two or more molecules combine to form larger molecules that contain repeating structural units) into a solid sandy matrix.



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## ***PRODUCT TO SPILL RATIO***

- 1 gallon of Perma Kleen will cover 100 sq. ft.
- 3 gallons of Perma Kleen will treat 1 cubic yard of soil
- Treatment of ***concrete*** at first treatment will normally be an 8/1 ratio (8 gallons of water to 1 gallon of Perma Kleen).
- For ***soil*** applications the product only penetrates an 1/8 th of an inch.



## **HOW TO APPLY PERMA KLEEN**

- 1.) First find all lines in the ground that may impede use of equipment.
- 2.) Dig around all lines with pick and shovel.
- 3.) Remove all contaminated soil from where it lies and spread it out at a clean spot on the location (a stand behind mini track with bucket and tiller is normally used for this process).
- 4.) Spread soil out about 4-6 inches if there is room on location, if not you'll have to make it thicker. This will take more time to dry out dirt!
- 5.) Once the contaminated soil is spread out spray the top of the soil (only penetrates 1/8 th of an inch.) till it starts to puddle. Repeat this process till you feel you have enough coverage of product.
- 6.) When you have enough coverage, spend the rest of the process drying out the soil. Once it has dried it will turn back to its original color and you can now put it back in the hole.
- 7.) It is good to always take a before and after photo from the same location and keep it on file.

## WATER

1.) Spray non-diluted Perma-Kleen on contaminated water. Cover entire contaminated area thoroughly and leave product on. Within a few hours, there will be a gray film covering the water. This is the London dispersion method taking place. Depending on weather, Perma-Kleen will completely remediate and remove any and all hydrocarbons from any type of water rendering it non-hazardous, hydrocarbon free, and will pass any and all EPA regulations and inspections if required. Perma-Kleen is ENVIRONMENTALLY FRIENDLY making it the best and most safe solution to oil field remediation.

