

PetroCleanze™ Technical Description

PetroCleanze is a customized formulation of the widely used RegenOx® *In Situ* chemical oxidation (ISCO) technology. When applied, this two-part reagent generates detergent-like properties, significantly increasing the desorption rates of hydrocarbons bound in saturated soils. Once the hydrocarbons are liberated into the dissolved-phase, they are more readily available for removal using a range of physical recovery techniques. PetroCleanze is designed to increase the viability and efficiency of enhanced recovery techniques such as dual-phase extraction, vacuum enhanced extraction and pump and treat systems.

PetroCleanze is a patented alkaline surface catalyst system that is applied with RegenOx® oxidizer complex (RegenOx Part A). Like RegenOx, PetroCleanze stimulates the rapid chemical oxidation of contaminants *in situ*. A further benefit is the generation of surfactants from the partial oxidation of hydrocarbons. Surfactants are formed upon alkaline oxidation of linear or branched hydrocarbons contaminants, which assist in the desorption of more contaminants from soil. This process enhances the ability to physically remove hydrocarbons from the contaminated subsurface by extraction or other methods.

For a list of treatable contaminants with the use of PetroCleanze, view the [Range of Treatable Contaminants Guide](#)



Example of PetroCleanze



Example of RegenOx

Chemical Composition – RegenOx Chemical Oxidant Part A

- Sodium Percarbonate – CAS #15630-89-4
- Sodium Carbonate Monohydrate – CAS #5968-11-6
- Silicic Acid – CAS #7699-11-6
- Silica Gel – CAS #63231

Chemical Composition – PetroCleanze

- Silicic Acid, Sodium Salt, Sodium Silicate – CAS#1344-09-08
- Ferrous Sulfate – CAS #7720-78-7
- Sodium Hydroxide – CAS #1310-73-2
- Sodium Tripolyphosphate – CAS #7758-29-4

Properties

- Bulk Density – Part A 0.9-1.2 g/cm³; Part B – 1.1-1.3 g/cm³
- pH – ~13 per recommended mixing ratios (3-5% oxidant in solution)
- Solubility – Oxidant - 14.5 g/100 g water; Activator – miscible in water
- Appearance – Brown to orange-brown when mixed with water
- Odor – Not detectable
- Vapor Pressure – None
- Chemical Hazard Classification - Part A – Class 5.1 Oxidizer; Part B is corrosive

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Storage and Handling Guidelines

Storage

- Store locked up
- Store in original tightly closed container
- Maintain storage temperatures between 50°F to 140°F (10°C to 60°C)
- Store away from incompatible materials
- Do not use containers made of aluminum, fiber-glass, copper, brass, zinc or galvanized metal
- Recommended storage containers: steel or plastic
- Store in a cool, dry, well-ventilated place

Handling

- Do not breathe mist or vapor
- Avoid contact with eyes, skin, and clothing
- Avoid prolonged exposure
- Provide adequate ventilation
- Wear appropriate personal protective equipment
- Observe good industrial hygiene practices

Applications

- RegenOx Part A and PetroCleanze are typically diluted with water at a rate of 3% to 8% oxidant-in-solution prior to application. The resulting mixture has a viscosity similar to water.
- Injects into formation through direct push injection points, injection wells or other injection delivery systems.
- The product is non-corrosive to most metals.

Application instructions for this product are contained here [RegenOx Application Instructions](#).

Health and Safety

Material is relatively safe to handle; however, we recommend avoiding contact with eyes, skin and clothing. OSHA Level D personal protection equipment including vinyl or rubber gloves, eye protection (goggles or splash shield), and dust mask are recommended when handling this product. Please review the Material Safety Data Sheet for additional storage, usage, and handling requirements here: [RegenOx Part A SDS](#) and [PetroCleanze SDS](#).

