



# McKinley Oil Field Products

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## PROTECT & SAVE

Scale Inhibitors

Corrosion Inhibitors

Hydrogen Sulfide Scavengers

Walnut Shells

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**M** cKinley Resources Oil Field Products help customers lower the costs and safety risks associated with oil and gas production by protecting equipment and reducing the presence of harmful gases. McKinley Oil Field Chemicals include:



### Corrosion Inhibitors

A corrosion inhibitor is a chemical compound that, when added to a liquid or gas, decreases the corrosion rate of a material, typically a metal or an alloy. Inhibitors are cost-effective alternatives to stainless steels, coatings, and non-metallic composites.

### Hydrogen Sulfide Scavengers

Hydrogen sulfide ( $H_2S$ ) is poisonous gas that can threaten the safety of workers and increase corrosion of equipment. Scavengers effectively remove hydrogen sulfide which improves safety and helps preserve expensive drilling equipment.

### Scale Inhibitors

Scale is a mineral deposit formed on the surface of metal or other material, usually due to temperature and pressure-related changes in saturation of produced water. Scale build-up can pose safety risks and cause restriction or plugging of production tubing. Scale inhibitors prevent this mineral deposition.

## Corrosion Inhibitors

### Corrosion Inhibitor-57

An alkylpyridine quaternary ammonium chloride that works by killing sulfate producing bacteria that produce hydrogen sulfide gas ( $H_2S$ ) which causes corrosion of metal and concrete.

- Used for oil well drilling, completion, producing and water flooding
- Blends with non-ionic surfactants and alcohols to make water-soluble corrosion preventatives

### Corrosion Inhibitor-88

A tall oil fatty acid (TOFA): diethylene triamine (DETA) imidazoline concentrate that works by adhering to metal surfaces (e.g. tubing, piping, tanks) and protecting them from corrosion due to chlorides or free acids.

- Used for drilling, producing, transporting, and refining crude oil
- Can also be formulated to serve as an emulsifier, wetting agent or scale preventive

## Hydrogen Sulfide Scavengers

### Hydrogen Sulfide Scavenger-1

An 80-83% triazine hydrogen sulfide scavenger that is a cost-saving option due to shipping less water. Hydrogen Sulfide Scavenger-1 helps to preserve expensive drilling equipment from the corrosive effects of  $H_2S$  gases.

- Can be used in bubble towers or continuously injected
- Allows water-based systems to scavenge and convert  $H_2S$  to a safe, non-solid by product corrosion inhibitor

### Hydrogen Sulfide Scavenger-15

A 60% active triazine hydrogen sulfide scavenger that is effective in removing hydrogen sulfide ( $H_2S$ ).

- Can be applied via pipeline/downhole continuous injection using an atomizer, or applied via a "Bubble Tower" contactor
- Can be used for  $H_2S$  removal from gas streams, sour hydrocarbon liquids (condensate and NGL streams), and sour liquid tank vapor spaces

## Scale Inhibitors

### Scale Inhibitor-98

The ammonium salt of an ether amine phosphonate scale inhibitor effective in controlling calcium carbonate and calcium sulfate scales in oilfield brines.

- Soluble in high calcium brines
- Thermally stable in systems up to  $150^{\circ}C$  ( $300^{\circ}F$ )
- Used in production wells, water and disposal wells, flow lines and surface equipment

### Scale Inhibitor-101

A low molecular weight polyacrylic acid in a 50% active aqueous solution. Scale Inhibitor-101 can be formulated into field strength scale inhibitors that will inhibit calcium carbonate, calcium sulfate, and barium sulfate scales.

- Used for solubility enhancement, crystal modification, and dispersing activity
- Used in industrial water treatment and oil production applications





Walnut shell is the shell or half-shell of a walnut. The walnut can be ground into various sizes, from coarse to extra fine depending on the application. **WNS Walnut Shells** can be used to control lost circulation and for water filtration.

## Lost Circulation Control



In oil and gas well drilling, lost circulation is the partial or complete loss of drilling fluids when the drill bit encounters natural fractures or caverns causing the drilling fluids to flow into this newly available space.

The consequences of lost circulation range from minimal loss to a complete blowout and loss of life. Thus lost circulation control is of great importance.

- **WNS Walnut Shells** may be used to treat an entire system in re-circulated fluids or in pill form with fibrous and flake material.
- The fine grade of **WNS Walnut Shells** can be circulated through a 20-mesh shale shaker screen.
- **WNS Walnut Shells** are an inert, non-toxic, biodegradable additive that is compatible with all types and densities of fluids.

## Water Filtration



Large volumes of water are often used during completion and production operations. The ability to treat and reuse oil field-produced water can drastically reduce costs by decreasing trucking requirements. In addition, water filtration and reuse is environmentally friendly.

- **WNS Walnut Shells** are used in filters that remove oily contaminants from water and treat oil field-produced water.
- Walnut shell filters are also used to treat refinery wastewater, steel mill direct spray and caster water, ethylene plant quench water, copper concentrate decant water, and industrial plant cooling water.
- Walnut shell filters eliminate the need for flat media retention screens and use only one media-scrubbing pump for up to eight filters. This simplifies design and lowers the cost of multi-filter systems.