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FOR A BETTER WORLD

Enhanced Oil Recovery

Triple7 EOR

for the Oil & Gas Industry

Triple7 EOR Benefits

Unlike most surfactants used in the petroleum industry, Triple7 EOR is a biobased surfactant which :

- Enhances oil well production with increased yields
- Suitable for use with salt water or wastewater
- Improves the waters thermal conductivity
- Protects metal parts, pipes and valves
- Safe to handle, store and dispose of

Enhanced Oil Recovery

Traditional oil recovery techniques typically recover only 20% - 40% oil extraction from an oil field with primary and secondary recovery methods, leaving 80% - 60% of oil trapped in the pores of rocks due to capillary forces. As a result, oil fields have often been abandoned once it became too expensive to extract the oil, which leaves up to two-thirds of unclaimed oil still in the ground.

With Enhanced (tertiary) Oil Recovery, extraction yields can normally improve by 60%.

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Enhanced Oil Recovery

Although surfactants have been used for EOR since the 1980's, their use never really took off because:

- Economically unfeasible
- Large up-front investment required
- Unknown return on investment
- Sensitivity to oil prices

Now, the use of surfactants is growing because of:

- Laboratory assessments showing the feasibility of chemical flooding
- Field data verifies chemical flooding is an effective way to recover remaining oil
- New chemical technologies and processes have opened the door for new opportunities

Surfactant Enhanced Oil Recovery (SEOR) is by far the front-runner in increasing oil field outputs in both the short and long term.

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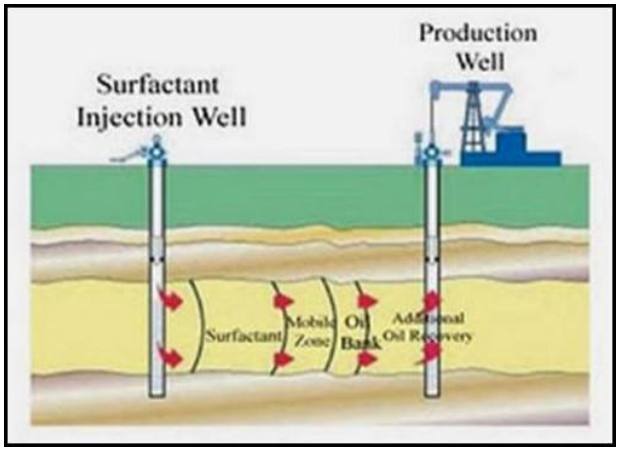
Enhanced Oil Recovery

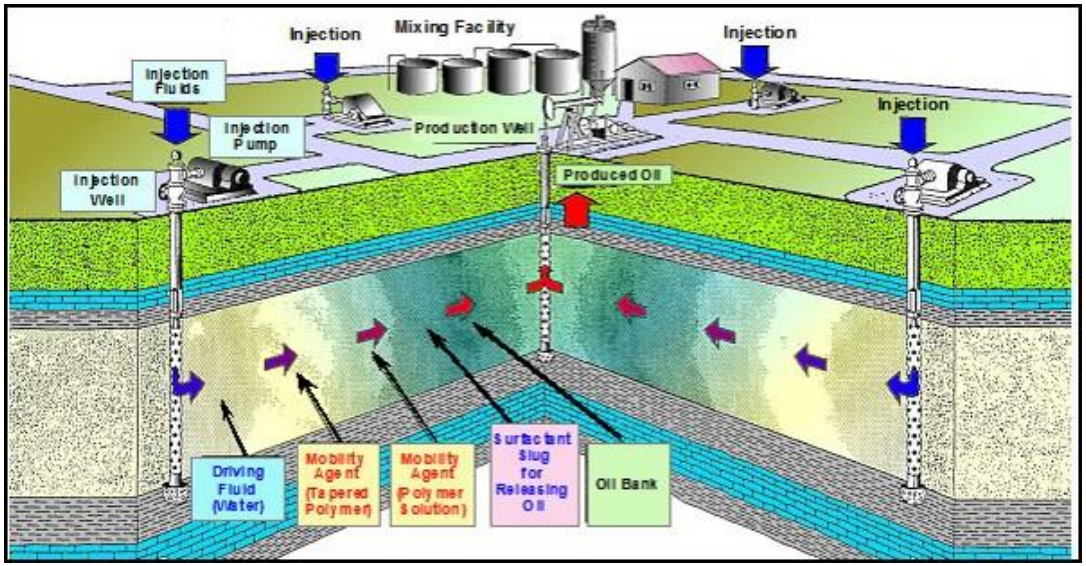


The surfactant-based Triple7 EOR is an aqueous formulation designed to increase the recovery of oil by flooding the reservoirs with water which contains a small amount of surfactant.

The use of surfactant assists in overcoming the natural capillary forces by lowering the oil/water interfacial tension (IFT) to a low level which allows the oil to flow through small rock pores.

Surfactant(s) need to be selected for oil reservoir conditions including:

- Crude oil type
- Temperature
- Water Condition



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Triple7 EOR

- An effective alternative to polymer and alkali chemical extraction.
- Cost effective oil recovery method with a high yield, low energy use and low cost.
- Advanced non-ionic surfactant formulation which consists of micelles designed to enhance oil extraction.
- The most universal oil extraction solution catering for the broadest range of strata permeability and oil types.
- Increases field permeability, overcomes capillary force, cohesion force and conglutination force barriers to oil recovery.
- Used at lower concentrations that other tradition EOR surfactants making it economically viable for large scale oil recovery.

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