

**Environmental** Solutions for Remediation of Oil Wells and Pipelines

## **PARAFFIN REMEDIATION ADDITIVE© (PRA©) FREQUENTLY ASKED QUESTIONS**

**1. What is PRA©?**

PRA© is a non-hazardous product that is formulated to return precipitated wax (paraffin) to its original oil phase in crude oil.

**2. Where can PRA© be used?**

PRA© may be used at any point in the oil stream where paraffin has “fallen” out of crude oil.

**3. How does PRA© work?**

PRA© acts as a crystal modifier to amend the molecular forces that prevent paraffin from returning into “solution” with the crude..

**4. Is PRA© approved by US-EPA?**

US-EPA does not approve products of this type because they are retained in a closed system and are not released back into the environment.

**5. What happens to wells treated with PRA©?**

The well casing, pump, rods, tubing as well as the perforations in the casing are freed of all wax buildup.

**6. Is PRA© flammable?**

PRA© is not flammable until greater than 170 F in a closed cup condition.

**7. What happens to fuel or oil that is treated with PRA©?**

PRA© breaks them out of any water that might occur in tanks as a result of condensation. This action results in “dry” oil, meaning there is very little to no water remaining in the separated fuel or oil.

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**8. Will the discharge stream of cleaning water from a tank cleaning operation burn after it has been treated with PRA©?**

The fuel or oil is not altered, but the discharged water has been stripped of combustible vapors making the stream non-flammable.

**9. Does PRA© help with asphaltenes?**

PRA© returns asphaltenes to the oil phase when a 1:10 ratio (10% xylene and 90% PRA©) with xylene is circulated in the well.

**10. Will PRA© help with sludge in the bottom of the tank?**

PRA© is infinitely soluble in water and penetrates the water phase of the sludge. The oil or grease in the sludge is released so that it may rise to the surface. At the surface, the oil or grease is separated from the water and may be decanted from the tank. The rust or soil particles in the sludge stay in the bottom of the tank.

**11. Are there any harmful vapors that occur during the treatment process?**

No additional vapor, even carbon-dioxide is produced by the treatment process.

**12. What happens if there are acids or solvents in addition to hydrocarbons in the well or tank?**

PRA© is formulated to separate hydrocarbons as well as most solvents. PRA© is equally effective in gasoline, diesel, kerosene, Av-gas, ethanol, methanol or bio-fuel tanks. PRA© neutralizes most acids and helps attain a safe pH in the well or tank.

**13. Will compounds other than fuel and oil be remediated by PRA©?**

Yes, PRA© is effective in the remediation of most hydrocarbon based compounds: animal fats and proteins, waxes, most acrylates, softer polymers, lacquers, resins, paints and industrial coatings such as Cosmoline. Heated units with PRA© may be needed in order to achieve complete removal of some exotic compounds.

**14. What happens if caustic or alkaline compounds are present in the waste stream?**

PRA© acts as a buffering agent for high pH streams to regulate the discharge water.

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PRA© cures the paraffin problem rather than moving it down stream to another location. Hot oil or water treatments simply lift the “lighter ends”. The end result of “hot” treatments result in an ever increasing accumulation of heavy waxes in the bottom of the well. This accumulation ultimately causes a shut down and premature closing of the well. PRA© extends the effective production life of the well.

**16. How is PRA© applied?**

PRA© is pumped down the annulus and then should be circulated for no less than three (3) hours or two (2) complete circulations of continuous pumping. More time may be required for extremely “dirty” wells. The most effective circulation time is 1 hour per 100 feet of well depth.

**17. How often is PRA© applied?**

PRA© is applied at any time production is diminished because of excess wax.

**18. How much PRA© is applied to the well?**

An initial treatment volume of 1 gallon per hundred feet of well casing depth to a depth of 8000 feet is recommended. Deeper wells should be treated with 1.5 gallons per hundred feet of casing depth.

**19. How is PRA© added to the well for maintenance?**

If a capillary line is not present in the annulus, then it should be added at the first available workover. PRA© may be metered down the capillary as a regular maintenance program. This action will reduce the need for full treatments.

**20. Does excessive water in the production stream affect PRA©?**

Since PRA© is infinitely soluble in water it may be necessary to add PRA© more frequently than normal. Frequent monitoring of the well is recommended when excessive water is present in the production stream to assure that PRA© is sufficient in volume. This makes certain that the tubing and pump is not overloading and causing water to be forced into the oil bearing formation.

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**21. Will PRA© interfere with demulsifier action?**

PRA© does not interfere with demulsifier or emulsifiers. When wells or crude oil is treated with PRA© it is not necessary to add other “separation” products because PRA© breaks the interface emulsion by removing oil droplets from water and water droplets from oil resulting in a clean break with no appreciable interface zone.

**22. Does PRA© contain any “Bugs”?**

“Bugs” are not present in PRA© because “bugs” tend to destroy hydrocarbons.

**23. Will PRA© disperse hydrocarbons into the aquifer or ground water system?**

No, PRA© is not a dispersant

**24. What happens if PRA© is accidentally spilled on the ground?**

PRA© is infinitely soluble in water. Spray the spill with water until the ground is saturated. PRA© is biodegradable and no harm will come to the environment as a result of the spill.

**25. Can PRA© be used in off-shore drilling operations?**

PRA© may be used on land or off-shore platforms or vessels subject to company policy and on-site coordinator’s approval.

In the event of a major accidental spill of PRA©, no harm will come to the environment. PRA© is infinitely soluble in sea water and has an extremely low toxicity to aquatic life, mammals and waterfowl.

**26. Is PRA© appropriate maritime operations?**

PRA© is the perfect product for maritime operations because PRA© will function well at lower temperatures than most solvents.

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**27. What happens if PRA© is injected into pipeline operations?**

PRA© is recommended for pipeline usage as it will remove waxes from kinked lines where pigs and scrapers will not function. PRA© is ideal for sub-sea situations where lower temperatures or low transmission volumes cause and increase in wax precipitation from the crude.

**28. Is PRA© suitable for tanker and barge operations?**

PRA© may be added to storage compartments or holds in tankers and barges at the rate as in storage tanks. PRA© added at the rate of 2-5% of the volume of sludge in the tank will allow the crude to “pick up” the wax into the crude. This treatment will reduce the need to take tanks or holds out of service for cleaning and will eliminate most disposal charges and fines for off-shore dumping of the wax. The wax re-enters the crude but does not change the grade of the crude and is sold as it is once again an integral part of the crude.

**29. Is personal protection equipment required when using or handling PRA©?**

No PPE is required.

**30. What should I do if PRA© is ingested, gets in my eyes or on my skin?**

If ingested drink several glasses of water. Do not induce vomiting. Upon eye contact, flush with clean water. Certain skin types may redden if skin is immersed in or is in contact with the product for extended periods of time. Wash skin in clean water to remove product.

**31. What happens if PRA© gets on my clothing or shoes?**

Clothing should be run through the normal wash cycle without adding detergent and shoes should be rinsed with clean cold water.

**32. What happens if PRA© becomes discolored or cloudy?**

The yellow color will sometimes lighten or become cloudy in certain weather conditions. This is due to dye fading from exposure to bright sunlight or extreme barometric changes. These are physical changes and will not affect the performance of PRA©.



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**33 What is the shelf life of PRA©?**

PRA© has a shelf life of 10+ years when stored in an unopened container. The container should be stored away from direct sunlight in temperature range of 45 F to 125 F.

**34. What are other similar products on the market?**

We are not aware of any other products on the market that are similar to PRA©.

**35. What is the relative cost of treating with PRA©?**

The flush and increased production following PRA© treatment of a well will generally offset the treatment costs. Decreased downtime of a few hours instead of 1-2 days results in increased production in addition to the initial flush.

Increased storage or transport capacity results in increased revenue and less dead space, particularly in "long-hauls".

If you have additional questions regarding PRA© or any of the Plutus range of **Environmentally Friendly products** please e-mail them to [info@accendolc.com](mailto:info@accendolc.com) or call us at 801-540-6338.

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