Solids Precipitation Inhibitor 2400 Steam Additive

SPI 2400S is a patented steam additive, which enhances the recovery of heavy oil in steam stimulated enhanced oil recovery projects. The product improves steam distribution and increases the ability of the steam to transport heated crude oil.

Overview

The technology was developed as a joint venture by Rocanda Enterprises Ltd. and Buckman Laboratories of Canada Ltd. This new technology represents "state of the art" development on how to enhance oil recovery in steam flooding applications.

Application of SPI 2400S in cyclic steam and steam drive projects has resulted in large increases in oil produced per cycle, per unit of time and per barrel of water injected as steam.

Advantages

1. Enhances oil recovery when introduced into steam stimulation projects.

2. Non-ionic surfactant with C_{18} structure, stable at temperature and salinity conditions where other chemicals are ineffective.

3. Functions effectively at ultra low concentrations, thus making SPI 2400S application economically attractive. Optimum concentration for field application is 10 ppm. This is the equivalent of 1 litre of SPI 2400S per $100m^3$ of steam.

4. Keeps formation water-wet and improves injectivity.

5. Reduces oil viscosity and promotes oil mobility via water external emulsion which breaks clean upon production.

6. Provides a more favourable oil/steam ratio.

7. Provides corrosion control by forming a protective film on metal surfaces.

8. Readily dispersed in water phase.

9. Completely soluble in oil phase.

10. Reduces emulsion problems by decreasing interfacial tension.

11. Compatible with heavy oil and lighter gravity crudes.

12. Critical control procedure not required because over-treatment will not result in formation of troublesome deposits.

Field Applications

1. Continuous injection of SPI 2400S at 10ppm as a part of a steam flooding application.

Each application must be evaluated individually. Your Buckman representative will be pleased to make specific recommendations.

Product Characteristics

Activity	Over 90% active solid surfactant
Temperature stable at	445^0C
Appearance	Amber-colored liquid
Density at 25^0C	0.90 g/ml
Approximate volume/kg	1110 ml
Flash Point by Tagliabue open-cup method	Above 135^0C
Pour Point	-17^0C
Pour Point 25% Aromatic Solvent Solution	-60^0C
pH of water dispersions and solutions	Neutral
Volatile temperature	300^0C

Packaging and Handling

SPI 2400S is a liquid packaged in non-returnable drums or semi-bulk containers. Materials suitable for storing and handling the product include ferrous metals, Penton, Polypropylene, molded nylon and Teflon.

In concentrated form, SPI 2400S can have an adverse affect on rubber, polyvinyl chloride, acrylics and certain other plastics.

SPI 2400S is biodegradable and has a very low order of toxicity to warm-blooded animals. It is not generally irritation to the skin, but as a general precaution, workmen should avoid prolonged contact with the product, avoid contamination of food, and wash with soap and water after handling the product.

Observe all safety precautions shown on the label and in the Material Safety Data Sheet.

Recommendations given in this bulletin are based on tests believed to be reliable. However, the use of the product is beyond the control of Buckman Laboratories, and no guarantees, expressed or implied, are made as to the effects of such or the results to be obtained if not used in accordance with directions or established safe practice. The buyer must assume all responsibility, including injury or damage, resulting from misuse of the product as such, or in combination with other material. This bulletin is not to be taken as a license to operate under or recommendation to infringe any patent.

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