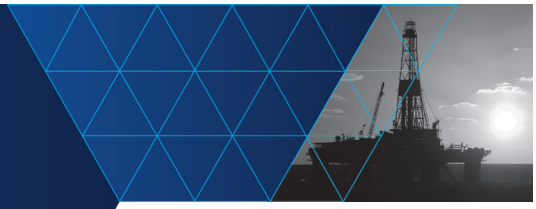
SPECIFICATIONS

STAR SHIELD® 100

Wellbore Stabilizer



Product Specifications

DESCRIPTION

STAR SHIELD® 100 wellbore stabilizer is a preventative wellbore shielding® additive enabling operators to successfully drill in challenging formations. STAR SHIELD 100 protects the formation by minimizing fluid and pressure invasion into matrix pores and microfractures by creating a 'shield' against the rock-fluid interface. STAR SHIELD technology – the additive advantage, adopted by major operators in unconventional shale plays in North America and deepwater Gulf of Mexico.

ADVANTAGE

- Operators drill safely with mud densities greater than the fracture initiation pressure
- Eliminates differential sticking in high permeability formations
- Does not shear degrade and has a broad particle size distribution
- High temperature stability (over 400F)

APPLICATION

- Seals up to 100 µm fractures at high differential pressure
- Solid control API mesh screens may needto be adjusted slightly
- Equally effective in water-, oil- or synthetic-based drilling fluid systems

RESERVOIR PERFORMANCE

- Demonstrated to be non-damaging in independent 3rd party testing

ENVIRONMENTAL ADVANTAGE

- Environmentally compliant for use in all areas in North America
- Passes the North America 96-hr LC50 bioassay mysid shrimp

TREATMENT RECOMMENDATIONS

- Effective at concentrations as low as 4-8 ppb
- Designed for use in the circulating fluid system
- Concentration can be monitored by Impact's proprietary Sand Bed Tester

PHYSICAL PROPERTIES

- Appearance: Light tan powder
- pH: 6-7 in fresh water
- Specific gravity: 1.6-1.7 g/cm^3
- Does not contain Graphite, Asphalt, Gilsonite or other black powder based material

HANDLING AND STORAGE

- STAR SHIELD® 100 should be stored in a dry environment. Avoid excessive dust and inhalation. Use appropriate PPE and review the SDS before use.

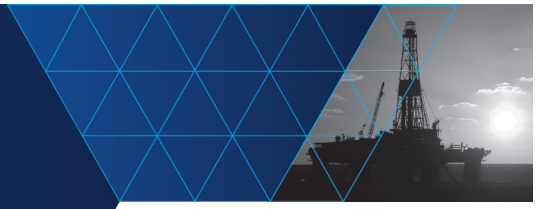
PACKAGING

- STAR SHIELD® 100 is available in 25-lb, multi-walled bags – 48 sack per pallet and supersack

SPECIFICATIONS

STAR SHIELD®

Wellbore Stabilizer



Product Specifications

DESCRIPTION

STAR SHIELD® wellbore stabilizer is a preventative wellbore shielding® additive enabling operators to successfully drill in challenging formations. STAR SHIELD protects the formation by minimizing fluid and pressure invasion into matrix pores and microfractures by creating a 'shield' against the rock-fluid interface. STAR SHIELD technology – the additive advantage, adopted by major operators in unconventional shale plays in North America and deepwater Gulf of Mexico.

ADVANTAGE

- Operators drill safely with mud densities greater than the fracture initiation pressure
- Eliminates differential sticking in high permeability formations
- Does not shear degrade and has a broad particle size distribution
- High temperature stability over 204°C (400°F)

APPLICATION

- Seals up to 250 µm fractures at high differential pressure
- Performs in circulating system with API 70 mesh screens
- Effective in water-, oil- or synthetic-based drilling fluid systems

RESERVOIR PERFORMANCE

- Demonstrated to be non-damaging in independent third party testing
- Lab testing using tight perm field rock and 350mD Clashach cores demonstrates low flow initiation pressure

ENVIRONMENTAL ADVANTAGE

- Environmentally compliant for use in all areas in North America
- Passes the North America 96-hr LC50 bioassay mysid shrimp

TREATMENT RECOMMENDATIONS

- Effective at concentrations as low as 3-12 lb/bbl
- Designed for use in the circulating fluid system
- Concentration can be monitored by Impact's proprietary Sand Bed Tester

PHYSICAL PROPERTIES

- Appearance: Light tan powder
- Specific gravity: 1.6-1.7 g/cm^3 (13.4-14.2 lb/gal)
- Does not contain graphite, asphalt, gilsonite or other black powder based material

HANDLING AND STORAGE

- STAR SHIELD® should be stored in a dry environment. Avoid excessive dust and inhalation. Use appropriate PPE and review the SDS before use.

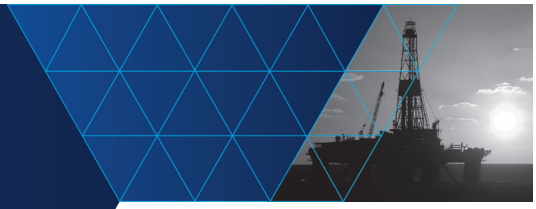
PACKAGING

- STAR SHIELD® is available in 25-lb, multi-walled bags – 48 sack per pallet.

SPECIFICATIONS

STAR SHIELD® 500

Wellbore Stabilizer



Product Specifications

DESCRIPTION

STAR SHIELD® 500 wellbore stabilizer is a preventative wellbore shielding® additive enabling operators to successfully drill in challenging formations. STAR SHIELD 500 protects the formation by minimizing fluid and pressure invasion into matrix pores and microfractures by creating a 'shield' against the rock-fluid interface. STAR SHIELD technology – the additive advantage, adopted by major operators in unconventional shale plays in North America and deepwater Gulf of Mexico.

ADVANTAGE

- Operators drill safely with mud densities greater than the fracture initiation pressure
- Eliminates differential sticking in high permeability formations
- Does not shear degrade and has a broad particle size distribution
- High temperature stability over 204°C (400°F)

APPLICATION

- Seals up to 500 µm fractures at high differential pressure
- Performs in circulating system with API 40 mesh screens
- Effective in water-, oil- or synthetic-based drilling fluid systems

RESERVOIR PERFORMANCE

- Demonstrated to be non-damaging in independent third party testing

ENVIRONMENTAL ADVANTAGE

- Environmentally compliant for use in all areas in North America
- Passes the North America 96-hr LC50 bioassay mysid shrimp

TREATMENT RECOMMENDATIONS

- Effective at concentrations as low as 5-10 lb/bbl
- Designed for use in the circulating fluid system
- Concentration can be monitored by Impact's proprietary Sand Bed Tester

PHYSICAL PROPERTIES

- Appearance: Light tan powder
- Specific gravity: 1.4-1.5 g/cm^3 (11.7-12.5 lb/gal)
- Does not contain graphite, asphalt, gilsonite or other black powder based material

HANDLING AND STORAGE

- STAR SHIELD® 500 should be stored in a dry environment. Avoid excessive dust and inhalation. Use appropriate PPE and review the SDS before use.

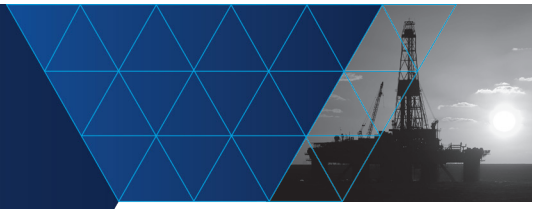
PACKAGING

- STAR SHIELD® 500 is available in 25-lb, multi-walled bags – 48 sack per pallet and supersack.

SPECIFICATIONS

STAR SHIELD® 3000

Wellbore Stabilizer



Product Specifications

DESCRIPTION

STAR SHIELD® 3000 wellbore stabilizer is a preventative wellbore shielding® additive enabling operators to successfully drill in challenging formations. STAR SHIELD 3000 protects the formation by minimizing fluid and pressure invasion into matrix pores and microfractures by creating a 'shield' against the rock-fluid interface. STAR SHIELD technology – the additive advantage, adopted by major operators in unconventional shale plays in North America and deepwater Gulf of Mexico.

ADVANTAGE

- Operators drill safely with mud densities greater than the fracture initiation pressure
- Eliminates differential sticking in high permeability formations
- Does not shear degrade and has a broad particle size distribution
- High temperature stability over 204°C (400°F)

APPLICATION

- Seals up to 3,000 µm fractures at high differential pressure
- Performs in circulating system with API 10-30 mesh screens
- Effective in water-, oil- or synthetic-based drilling fluid systems

RESERVOIR PERFORMANCE

- Demonstrated to be non-damaging in independent third party testing

ENVIRONMENTAL ADVANTAGE

- Environmentally compliant for use in all areas in North America
- Passes the North America 96-hr LC50 bioassay mysid shrimp

TREATMENT RECOMMENDATIONS

- Effective at concentrations as low as 8-12 lb/bbl; higher concentrations used in sweeps
- Designed for use in the circulating fluid system
- Concentration can be monitored by Impact's proprietary Sand Bed Tester

PHYSICAL PROPERTIES

- Appearance: Light tan powder
- Specific gravity: 1.4-1.5 g/cm^3 (11.7-12.5 lb/gal)
- Does not contain graphite, asphalt, gilsonite or other black powder based material

HANDLING AND STORAGE

- STAR SHIELD® 3000 should be stored in a dry environment. Avoid excessive dust and inhalation. Use appropriate PPE and review the SDS before use.

PACKAGING

- STAR SHIELD® 3000 is available in 25-lb, multi-walled bags – 48 sack per pallet and supersacks.