



CORROSION

INHIBITION

Shotwell's Corrosion Inhibitor Concentrates

Corrosion inhibitors used in oil and gas production, processing and transportation are typically multicomponent blends containing several active components, formulation aids, and surfactants in a solvent package.

Shotwell offers a variety of water- and oil-soluble corrosion inhibitor concentrates for continuous and batch treatment applications.

INTRODUCING SHOTWELL'S CORROSION INHIBITOR CONCENTRATES CATALOG

OIL-SOLUBLE CORROSION INHIBITOR CONCENTRATE

SHCI-3501

SHCI-3501 is an oil-soluble corrosion inhibitor that is:

- A dimer/trimer acid-based formulation.
- Designed for batch treatments.
- Applicable for sweet and sour environments.

WATER-SOLUBLE CORROSION INHIBITOR CONCENTRATES

SHCI-3401

SHCI-3401 is water-soluble corrosion inhibitor blend used for continuous treatment:

- Cationic and thermally stable up to 150°C.
- Applicable for sweet and sour environments.
- Generally compatible with nonionic and cationic additives.

SHCI-3402

SHCI-3402 is water-soluble corrosion inhibitor blend used for continuous treatment:

- Anionic and thermally stable up to 121°C.
- Applicable for sweet and sour environments.
- Generally compatible with nonionic and anionic additives.

SHCI-3403

SHCI-3403 is a high-temperature, water-soluble corrosion inhibitor blend used for continuous treatment:

- Thermally stable up to 177°C.
- Applicable for sweet and sour environments.
- Generally compatible with nonionic and cationic additives.

RECOMMENDED TREATMENT RATES

- ✓ Blend down to a desired field-use concentration using appropriate solvent(s).
- ✓ Adjust dosage according to corrosion monitoring data to meet a desired target corrosion rate.

PRODUCT HIGHLIGHTS

SHCI-3501

OIL-SOLUBLE CORROSION INHIBITOR CONCENTRATE

Oil-soluble corrosion inhibitors form a more persistent protective film on metal surfaces than those that are water soluble. The protective film keeps corrosive species away from the metal surface, making it effective against carbon dioxide (CO₂) and hydrogen sulfide (H₂S) corrosion.

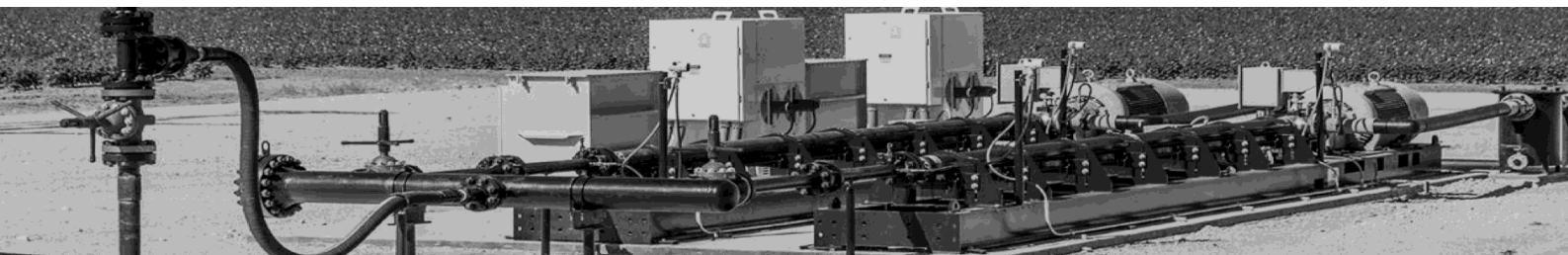
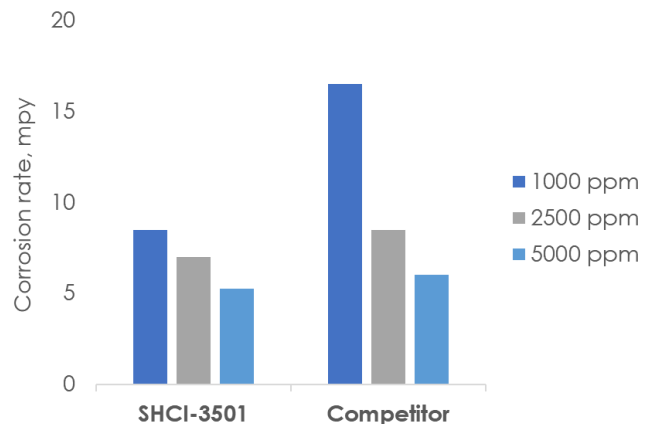
PHYSICAL PROPERTIES

PROPERTY	SHCI-3501
Actives	63%
Density at 25°C, g/mL	0.92
Flash Point (PMCC)	35°C / 95°F
Freeze Point	-15°C / 5°F
Viscosity at 25°C (cps)	1,110
Viscosity at 40°C (cps)	455

WHEEL TEST

During the Wheel Test, SHCI-3501 was found to have comparable performance to a competitive product. The test was performed under the following sweet conditions:

- 35% active corrosion inhibitor solution
- 6.6% sodium chloride, NaCl, 0.35% calcium chloride, CaCl₂, brine
- Synthetic hydrocarbon LVT-200 used as oil phase
- 90:10 brine/oil ratio
- CO₂ saturated test fluid
- 66°C environment
- 24-hour duration



PRODUCT HIGHLIGHTS

SHCI-3401

WATER-SOLUBLE CORROSION INHIBITOR CONCENTRATE

PHYSICAL PROPERTIES

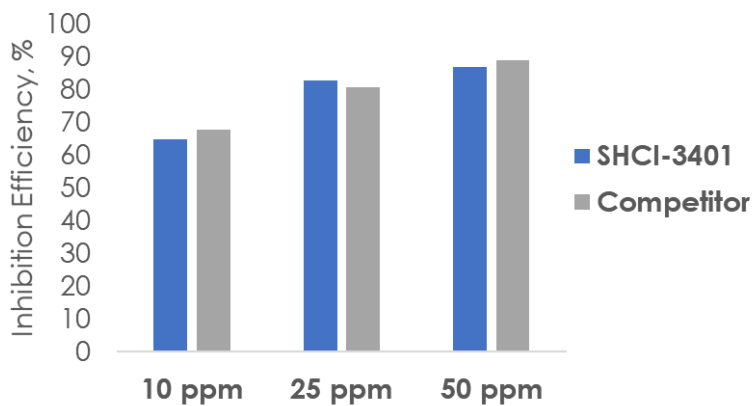
PROPERTY	SHCI-3401
Actives	80%
pH (10% aqueous)	4.2
Density at 25°C, g/mL	0.99
Flash Point (PMCC)	40°C / 104°F
Pour Point	-57°C / -70.6°F
Freeze Point	-58°C / -72.4°F
Viscosity at 25°C (cps)	125

WHEEL AND ROTATING CAGE AUTOCLAVE (RCA) TEST

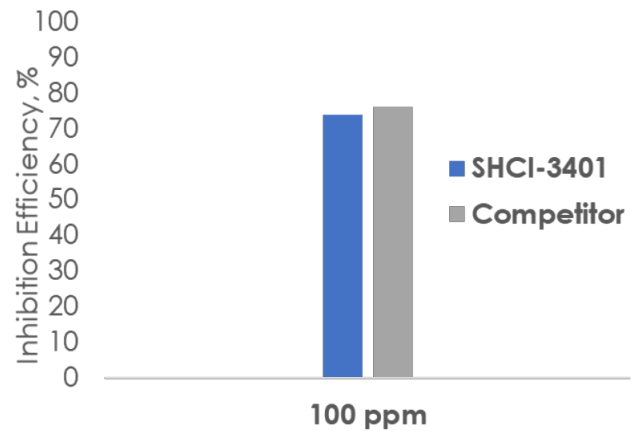
SHCI-3401 was found to have comparable performance to a competitive product used in the Middle East in Wheel and Rotating Cage Autoclave (RCA) tests. For these tests, SHCI-3401 was diluted to match the activity of the competitive product.

The tests was performed under the following conditions:	
High salinity brine (TDS 188,952 mg/L)	90:10 brine/oil ratio
Synthetic hydrocarbon used as oil phase	50 psi CO ₂ (RCA test)
CO ₂ saturated test fluid (Wheel test)	0.99
150 Pa shear stress (RCA test)	80°C environment
24-hour duration	

WHEEL TEST DATA



RCA TEST DATA



PRODUCT HIGHLIGHTS

SHCI-3402

WATER-SOLUBLE CORROSION INHIBITOR CONCENTRATE

PHYSICAL PROPERTIES

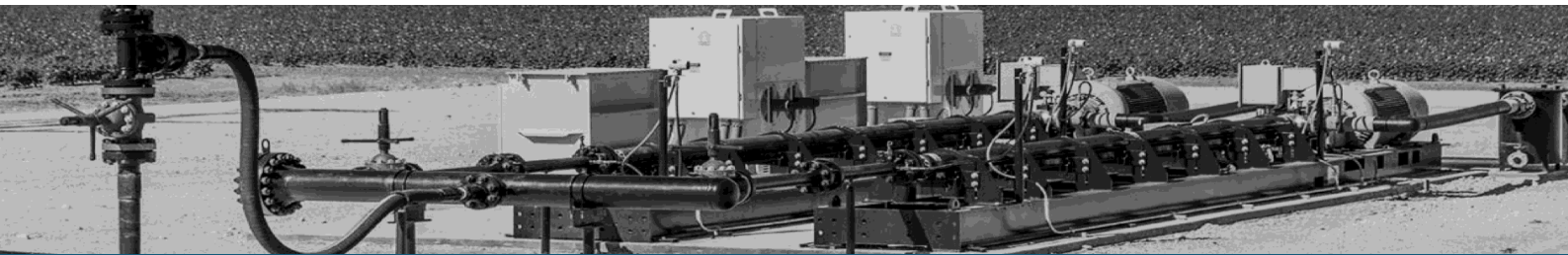
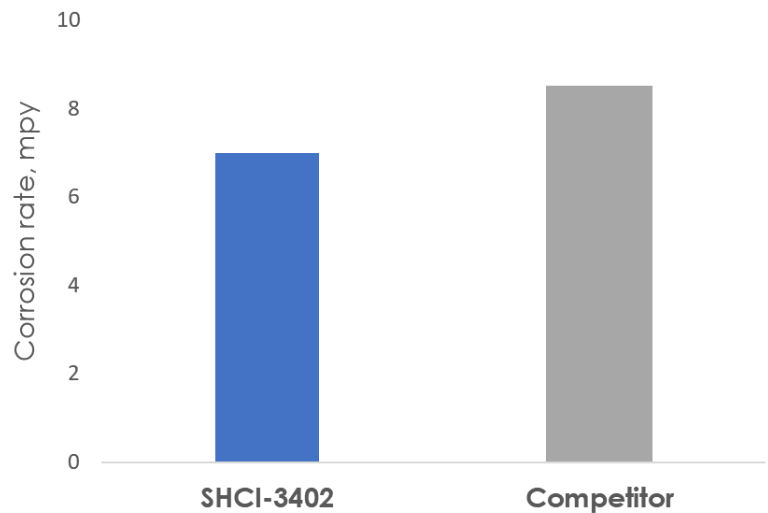
PROPERTY	SHCI-3402
Actives	60%
pH (10% aqueous)	1.73
Density at 25°C, g/mL	1.02
Flash Point (PMCC)	65°C / 149°F
Pour Point	-39°C / -38.2°F
Freeze Point	-39°C / -38.2°F
Viscosity at 25°C (cps)	241

WHEEL TEST

During the Wheel Test, SHCI-3402 was found to have comparable performance to a competitive product under sour conditions.

The test was performed under the following conditions:

- 25 ppm, 35% active solution
- 6.6% sodium chloride (NaCl), 0.35% calcium chloride (CaCl₂), brine
- 500 ppm H₂S
- 90:10 brine/oil ratio
- 66°C environment
- 24-hour duration



PRODUCT HIGHLIGHTS

SHCI-3403

HIGH-TEMPERATURE, WATER-SOLUBLE CORROSION INHIBITOR CONCENTRATE

PHYSICAL PROPERTIES

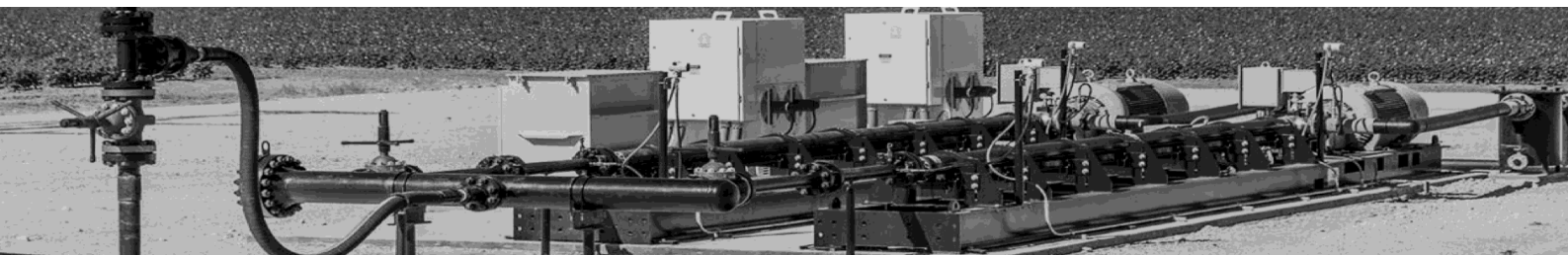
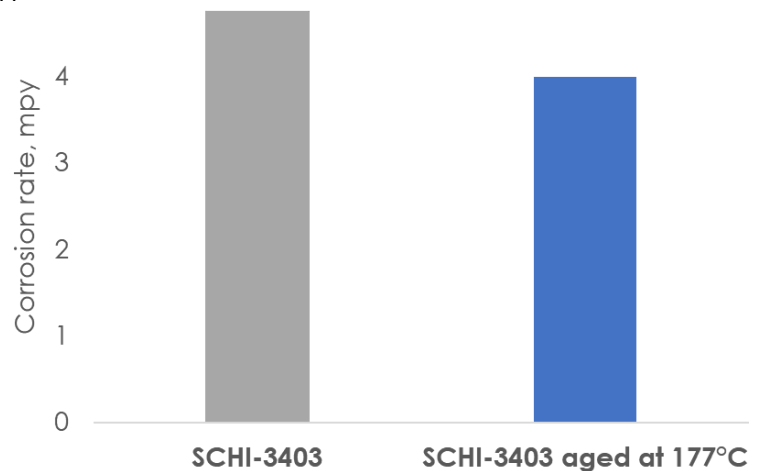
PROPERTY	SHCI-3403
Actives	43%
pH (10% aqueous)	9.05
Density at 25°C, g/mL	1.03
Flash Point (PMCC)	38°C / 100.4°F
Pour Point	-23°C / -9.4°F
Freeze Point	-24°C / -11.2°F
Viscosity at 25°C (cps)	60

WHEEL TEST

SHCI-3403 was heat stressed at 177°C for 24 hours. Then its performance was compared to an unstressed sample of SHCI-3403 using the Rotating Cylinder Electrode (RCE) test.

The RCE test was performed under the following conditions:

- 25 ppm, 35% active corrosion inhibitor solution
- 3.5% NaCl, 0.11% CaCl₂, 0.07% MgCl₂, brine
- CO₂ sparge
- 80°C environment
- 24-hour duration



CONTACT US



LEADING-EDGE FACILITY

- ▶ Fully Automated
- ▶ ISO9001:2015 certified
- ▶ NSF certified

LOCATION

- ▶ Heart of Permian Basin
- ▶ 35,000 square feet
- ▶ Midland, Texas

CONTACT US FOR MORE INFORMATION AT
SALESSUPPORT@SHOTWELLHYDROGENICS.COM
WWW.SHOTWELLHYDROGENICS.COM



QUALITY

- ▶ Blend capability up to 57.6M gallons/year
- ▶ Stringent Quality Control and Quality Assurance Standards



SERVICE

- ▶ Reliable technical and lab support
- ▶ Transport Bulk and Non-Bulk containers to field