

# • PRODUCT **PORTFOLIO**

# IMPROVING PRODUCTION

### **Enhancing Performance**

Operators are under pressure to reduce costs, increase oil production and do more with less. Our solutions can help get your well on level footing — that's productive innovation.

Shotwell serves the oil and gas industry end-to-end, from blending specialty oilfield chemicals to enhance well performance, to products that control and prevent scale and corrosion, to chemistries for refineries and petrochemical utilities.

PRODUCT	DESCRIPTION	APPLICATIONS
BIOCIDES		
• SHBC-9010	10% Didecyl Dimethyl Ammonium Chloride (DDAC). Highly effective, synergistic microbiocide for controlling spoilage, odor causing, corrosion inducing, slime-forming bacteria, sulfate-reducing bacteria, fungi, yeast molds and algae.	Water floods, Frac & completion fluids, wastewater, cooling & process water     Utilized in water treatment, algae treatment, and oil & gas
• SHBC-9020	12% Glutaraldehyde + 1.8% Didecyl dimethyl ammonium chloride + 1.2% Alkyl dimethyl benzyl ammonium chloride. It is a highly effective, synergistic microbiocide for controlling spoilage, odor causing, corrosion inducing, slime-forming bacteria, sulfate-reducing bacteria, fungi, yeast molds and algae.	Water floods, Frac & completion fluids, wastewater, cooling & process water     Utilized in water treatment, algae treatment, and oil & gas
CORROSION INHIBITOR	S Commence of the commence of	
SHCI-OS1	Oil soluble corrosion inhibitor, Dimer/trimer acid-based formula, Concentrate that is diluted for RTU product.	Oil & gas production, processing and transportation.
SHCI-WS1	Water soluble corrosion inhibitor, Cationic, Concentrate that is diluted for RTU product.	Oil & gas production, processing and transportation.
SHCI-WS2	Water soluble corrosion inhibitor, Anionic, Concentrate that is diluted for RTU product.	<ul> <li>Oil &amp; gas production, processing and transportation.</li> </ul>
SHCI-WS3	High temperature (177°C), water-soluble corrosion inhibitor, Concentrate that is diluted for RTU product.	Oil & gas production, processing and transportation.
SHCI-A23	An environmentally safe, high-performance corrosion inhibitor designed specifically for urea hydrochloride formulations.	Designed for urea hydrochloride formulations.
CONVENTIONAL ACID	ADDITIVES	
• SHAA-9100	Intensifier that supports corrosion inhibition in low temperature applications.	<ul> <li>Used with any conventional acid (H<sub>2</sub>S, H<sub>2</sub>SO<sub>4</sub>, etc.)</li> <li>Can be with any of the SHGA line for additional protection.</li> </ul>
• SHAA-9200	Eco-Friendly, acid corrosion inhibitor that is effective for broad protection of common steels and alloys in high temperature applications up to 220°C (430°F).	<ul> <li>Used with any conventional acid (H<sub>2</sub>S, H<sub>2</sub>SO<sub>4</sub>, etc.)</li> <li>Can be with any of the SHGA line for additional protection.</li> </ul>



PRODUCT	DESCRIPTION	APPLICATIONS		
DEGREASERS				
• SHDG-6000	Blend of vegetable esters, citrus terpenes and surfactants. With a high flash point (>142°F), it is ideal for parts cleaning and heavy degreaser applications. The product is very effective a removing crude oil, tar and asphalt. It can be rinsed with water or diluted at the time of use to make a time release microemulsion.	Oilfield chemicals     Industrial degreasers and cleaners		
• SHDG-6010	High performance blend of biobased solvents and surface wetting agents designed specifically for well bore cleaning. Effectively cleans asphaltene and paraffins from oil-wet surfaces preventing their re-adsorption by leaving surfaces water wet. Can be used during completion and production to remove pipe dope, asphaltenes and paraffins.	<ul><li>Oilfield chemicals</li><li>Solvents</li><li>Degreasing agents</li></ul>		
• SHDG-6011	Industrial strength cleaner and degreaser made from all bio-based ingredients. Can be used neat or diluted at time of use. Designed to rinse free.	<ul><li>Oilfield chemicals</li><li>Industrial degreasers and cleaners</li></ul>		
• SHDG-6020	Combination of d-limonene and soy methyl ester with a flash point of greater than 140F, making it ideal for parts washing and general degreasing applications requiring a non-flammable solvent.	Industrial cleaning applications		
• SHDG-6021	Solvent based on soy methyl ester. It is ideal for applications requiring a flash point greater than 200°F. It is slow evaporating solvent with excellent penetrating characteristics. The product has been awarded, Design for the Environment recognition by the EPA.	Industrial cleaning applications		
• SHDG-6030	Patented blend of citrus terpenes and a surfactant emulsion. Has performance characteristics of products containing up to 40% petroleum-based solvents. Various dilutions can produce products for cleaning metal parts, removing crude oil stains, washing oil field rigs, stripping latex, removing adhesives and cleaning up graffiti.	Degreaser, Ollfield rig wash, Graffiti removal, Bug and Tar Remover, Kitchen Cleaner, Marker & ink remover, Carpet cleaner, Laundry pre-treat, Industrial laundry, and Wall & tile cleaner.		
FRICTION REDUCERS				
• SHFR-8908	Synthetic, high molecular weight, anionic polyacrylamide copolymer.	Hydraulic fracturing operations utilizing freshwater to moderately high brines, comprised predominantly of monovalent cationic species.		
• SHFR-2220	Synthetic, high molecular weight, anionic polyacrylamide copolymer.	<ul> <li>Recommended for use in hydraulic fracturing operations utilizing freshwater to moderately high brines, comprised predominantly of monovalent cationic species.</li> </ul>		
SHFR-230VB	Synthetic, high molecular weight, anionic polyacrylamide copolymer.	Formulated for use in hydraulic fracturing operations, which utilize freshwater or light brines as the fracturing fluid.		
• SHFR-330VBHB	Synthetic, high molecular weight, anionic polyacrylamide copolymer.	Formulated for use in hydraulic fracturing operations, which utilize mid to high brines as the fracturing fluid.		
• SHFR-9500	Complex blend of organic solvents (plant based), nano colloidal compounds and flow improvers. Minimal VOC contributions.	Can be injected into the reservoir, production line, pipelines, and treatment & storage tanks.		



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FOAMERS					
• SHSFH1-1004	High performance foamer with scale inhibition additive. High brine tolerance	<ul> <li>Increase gas production</li> <li>Prevent Liquid loading</li> <li>Remove produced Fluids</li> <li>Stabilize production volumes</li> </ul>			
• SHSFH1-1006	A green version of SHSFH1-1004, a high performance foamer with scale inhibition additive.	Same applications at SHSFH1-1004			
• SHSFH1-1082 & SHSFH1-1084	NRGMax-powered Aphron Foamers, effective in varying salinity levels (even high brine environments) and with gelling agents of varying quality (xanthan or non-xanthan gel-based agents).	Frac-plug drillouts, workovers, recompletions, drilling, re-drilling, horizontal re-entry drilling, completions			
GREEN CAUSTICS					
• SHGC-9300	Modified Alkali product that has comparable abilities of caustic soda w/o the hazardous exposure and corrosion properties.	<ul> <li>Can be used in any situation where pH of the fluid needs to be adjusted (upwards) such as H2S/CO2 sequestration in drilling fluids, caustic scrubbers.</li> <li>Bitumen extraction, ASP water floods, Enhance polymer hydration properties, degreaser/cleaning agent, Neutralizing agent.</li> </ul>			
GREEN ACIDS	GREEN ACIDS				
• SHGA-9100	Unreacted HF donor. Activated by SHGA-9600 resulting in the fluoride ion being released and thus exhibits all the dissolution characteristics of HF acid.	<ul> <li>Downhole in sandstone formations where silica is present.</li> <li>Other HF applications such as acid-mud systems.</li> </ul>			
• SHGA-9300	Strong (21% HCl equivalent), odorless, non-oxidizing, nonvolatile acid, alternative with zero halogens and will not produce chlorides.	<ul> <li>Ideal for applications where a strong acid is required and high temperatures or exotic metals are exposed (chrome, aluminum)</li> <li>Cleaning of exchangers, pumps, etc. that contain soft metals such as aluminum, chrome, nickel, etc.</li> </ul>			
• SHGA-9400	High performance NORM descaler designed to remove sulfite scale with the ability to dissolve large amounts of barium sulfate. It also reduces the size of the sulfate particles and limits reprecipitation.	<ul> <li>Applications where the scale contains strontium, barium and/or calcium scale including downhole or surface applications.</li> </ul>			
• SHGA-9600	Low-hazard replacement for all HCl blends designed to be applied on high to ultra-high temperature applications. It provides optimal wormholing PVbt-opt efficiency vs HCl or other competitors.	<ul> <li>Can be used in acid fracturing, matrix stimulations or spearhead applications. The lower interstitial velocity allows for the reduction in the requirements for high injection rates typically utilized with HCI.</li> <li>Treatment of low-permeability, high calcite formations.</li> </ul>			
• SHGA-9700	Low hazard replacement for HCl that has comparable reaction rates to 15% HCl (at a 33% dilution).	<ul> <li>During pump-downs as a spearhead acid in lower temperature applications.</li> <li>Low temperature scale removal in piping, heat exchangers, boilers, etc.</li> </ul>			



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G	REEN ACIDS		
٠	SHGA-7000	Low hazard replacement for HCl that has comparable reaction rates to 15% HCl.	<ul> <li>During pump-downs as a spearhead acid in lower temperature applications.</li> <li>Low temperature scale removal in piping, heat exchangers, boilers, etc.</li> </ul>
•	SHGA-7003	Slightly more concentrated version of SHGA-7004.	Same as SHGA-7004
•	SHGA-7004	An alternative to citric acid, SHGA-7004 is designed to function as a drop-in replacement. Citric acid has a very low calcium carbonate (or similar scale) dissolution loading, but SHGA-7004 has the same dissolution properties as a 7.5% muriatic (hydrochloric) acid solution, but with all the safety features of citric acid.	<ul> <li>SHGA-7004 is supplied as a field-ready RTU (readyto-use) product.</li> <li>Add to the material to be cleaned (surface) or pumped down-hole and allow to soak.</li> <li>No neutralization step is required. For heavier buildups, the product can be left on for longer periods, including overnight, without the concern for metal damage.</li> </ul>
•	SHGA-A100	Non-hazardous mineral scale remover. Specially formulated to meet boiler manufacturer's specifications. Low foam.	Cleaning of boilers and heat exchangers
•	SHGA-A150	Non-hazardous, green H2SO4 replacement. Non chloride containing	Drop-in replacement for sulfuric acid
•	SHGA-A200	Low hazard, green HCl replacement. Best in Industry corrosion protection. Applications up to 210°F.	<ul><li>Drop-in replacement for 15% HCI</li><li>Acid jobs, spearhead acid, frac</li></ul>
•	SHGA-A210	SHGA-A210 is a version of SHGA-A200 optimized for temperatures up to 300°F.	<ul> <li>Drop-in replacement for 15% HCI</li> <li>Acid jobs, spearhead acid, frac</li> <li>Temperature stability up to 300°F.</li> </ul>
•	SHGA-A220	SHGA-A220 is a version of SHGA-A200 optimized for temperatures up to 350°F.	<ul> <li>Drop-in replacement for 15% HCI</li> <li>Acid jobs, spearhead acid, frac</li> <li>Temperature stability up to 350°F</li> </ul>
•	SHGA-A230	SHGA-A230 is a version of SHGA-A200 optimized for temperatures up to 400°F.	<ul> <li>Drop-in replacement for 15% HCI</li> <li>Acid jobs, spearhead acid, frac</li> <li>Temperature stability up to 400°F</li> </ul>
•	SHGA-300	SHGA-300 is a version of SHGA-A200 blended with THPS.	<ul> <li>Acid jobs where additional biological control is required.</li> <li>Iron Sulfide deposits including SRB control</li> </ul>
•	SHGA-400	SHGA-400 is a version of SHGA-A200 with HF alternative blended into the formulation.	Deposit removal for deposits that contain silica
•	SHGA-500	SHGA-500 is a higher reactive version of SHGA-A200. Ideal for low temperature uses.	Quicker deposit removal dictated by low residence time



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H <sub>2</sub> S SCAVENGERS		
• SHSCH1-8000	H <sub>2</sub> S scavenger based on MEA triazine that also contains NRGMax® which dramatically boosts the efficacy of triazine. Allows for 95-100% product usage or a 33% increase in residence time before breakthrough.	Oil & Gas production, Bubble towers, static mixing applications.
• SHSC-8003	A water-soluble, oil-dispersible, non triazine-based hydrogen sulfide scavenger. It is highly engineered for the treatment of hydrocarbon streams that will be processed in refineries. SHSC-8003 will convert $\rm H_2S$ into a nontoxic, stable irreversible sulfate salt and water.	<ul> <li>Removal of H<sub>2</sub>S in crude oil production streams and for treatment in barges and tankers.</li> <li>Suitable for storage tanks and recirculation.</li> </ul>
• SHSC-8005	A water-soluble, oil-dispersible hydrogen sulfide and mercaptan scavenger.	<ul> <li>Can be applied in crude oil production streams and for cargo treatment in barges and tankers of fuel oil and crude.</li> <li>Suitable for storage tanks and recirculation.</li> </ul>
PARAFFIN and/or ASPI	HALTENE CONTROL	
• PD-6582	Complex mixture of crystal modifiers, solvents, and surfactants used as a dispersant with additional inhibition properties for inhibition and control of paraffin deposition.	Oil & Gas surface equipment, flowlines, tubulars, near wellbore, and formations.
• SHAR-9400	Bio-degradable, water-based solvent designed for asphaltene control. Will remove existing deposits.	Oil & Gas EOR, petroleum refining, pipeline cleaning, asphaltene removal, and heavy oil viscosity improvement.
SCALE INHIBITORS		
• SHSI1-2200	All-purpose scale inhibitor containing 6% DETA active solution and can work synergistically with polymeric scale inhibitors to create an effective solution for heavily scaling wells. This broad-spectrum scale inhibitor controls calcium carbonate scales, calcium sulfate scales, and barium sulfate scales.	<ul> <li>Oil &amp; gas production, processing and transportation.</li> </ul>
• SHSI1-2300	All-purpose scale inhibitor containing 10% BHMT active solution. This broad-spectrum scale inhibitor controls calcium carbonate scales, calcium sulfate scales, and barium sulfate scales.	Oil & gas production, processing and transportation.
• SHSI-2718	Multifunctional, bio-friendly polymer product, provides exceptional calcium carbonate, calcium sulfate and barium sulfate inhibition in high salinity oilfield brines, flowback and slick water systems. Fed at 25 - 100 ppm.	Oil & gas production
• SHSI-2786	Bio-friendly polymer product that is an outstanding workhorse inhibitor for hard forming scales such as strontium and/or barium sulfate, as well as calcium carbonate scales in typical oilfield brines. Stable over 120°C. Fed at 3 to 50 ppm.	Oil & gas production
• SHSI-2786P	Powder version of SHSI-2786. Slow release, adjustable dosage powder containing the non-phos scale inhibitor.	Oil & gas production
• SI-2500	An aqueous solution of 20% DETA phosphonate formulated with NRGMax®, developed for scale management.	<ul> <li>Oil &amp; Gas surface equipment, flowlines, tubulars, near wellbore, formation damage, tanks, pipelines, and SWDs.</li> </ul>
• SHICH-9200	Control of iron deposits and/or fouling. Inhibits the formation of iron-based deposits and at higher dosages, removes existing deposits.	Downhole iron deposit control and clean-up



PRODUCT	DESCRIPTION	APPLICATIONS	
SURFACTANTS			
• SHSFH1-1000	Specialty non-emulsifier / frac surfactant containing performance enhancing NRGMax®.	Oil & Gas completions, EOR/Waterfloods, Restims, SWDs, and production tank batteries.	
• SHSFH1-1014	Proprietary blend of surfactants and NRGMax® that is compatible with most frac fluid systems.	Oil & Gas completions, EOR/Waterfloods, Restims, SWDs, and production tank batteries.	
• SHSFH1-1020	An environmentally safe, non-hazardous surfactant, Powered by NRGMax®, that is inherently safe for the environment, while improving fracture effectiveness and overall well performance. Does not contain marine pollutants, is nontoxic, and is comprised of ingredients from the EPA's Safer Choice ingredients list.	Oil & Gas completions, EOR/Waterfloods, Restims, SWDs, and production tank batteries.	
SHSFH1-1020ME	Nonionic microemulsion EOR/IOR surfactant that reduces interfacial and surface tensions while lowering capillary pressures for improved fluid recovery. This blend of surfactant and solvent penetrates and dissolves hydrocarbons, allowing fluid recovery.	<ul> <li>Oil &amp; Gas completions, EOR/Acidizing frac fluids.</li> <li>Post stimulation well productivity increases w/improved recovery</li> <li>Remediate potential damage to formation</li> </ul>	
SHSFH1-1010CX	Concentrated non-emulsifier. Dilutions from 8:1 (high brine) up to 15:1 or higher. Made with EPA Safer Choice Ingredients	Non-emulsifier     Frac stimulation     Well completions	
• SHSFH1-1010	Ready-to-use, field strength version of our concentrated non-emulsifier. Made with EPA Safer Choice Ingredients.	<ul><li>Non-emulsifier</li><li>Frac stimulation</li><li>Well completions</li></ul>	
SWD ADDITIVES			
• SHSI-2786	Bio-friendly biopolymer, Multi-scale prevention including barium and calcite deposits, Works on comingled waters, 3-50 ppm feed rate.	Oil & Gas production, SWDs	
• SHWT-9000	All natural, non-polymeric precipitant for heavy metals and salts.	Oil & Gas production, SWDs	
• SHGA-9300	Strong (21% HCl equivalent), odorless, non-oxidizing, nonvolatile acid alternative with zero halogens and will not produce chlorides. Prevents deposition by lowering the pH, removes existing deposits, compatible with soft metals.	Oil & Gas production, SWDs	



PRODUCT	DESCRIPTION	APPLICATIONS
SPECIALTY PRODUCTS		
• SHSIX1-2501	An effective alternative to hydrochloric acid. It prevents scale formation, iron build up, and degradation of materials and parts exposed to corrosive solutions on frac equipment. Formulated with our proprietary technology, NRGMax®, SHSIX1-2501 will dissolve most Fe, Ca, and CO3-2 scales.	Oil & Gas production and SWDs.
• SHPA-9850	Developed for asphaltene-based sludges. It is designed specifically for reliquefying or remediating petroleum (hydrocarbon) based sludges, sediment, and solids.	Oil & Gas production and tank bottoms.
• SHPD-3660	Green industrial cleaner, descaler and paraffin remover designed to clean up damaged formations and wells.	Oil & Gas EOR, petroleum refining, pipeline cleaning, scale removal, paraffin removal, and paraffin coated iron sulfate plug removal.
• SHPD-3685	Developed for is for paraffin-based sludges. It is designed specifically for reliquefying or remediating petroleum (hydrocarbon) based sludges, sediment, and solids.	Oil & Gas production and tank bottoms.
SHFR-DR1000	Diluent Optimizer for Heavy Oils.	First blended with the current naphtha and then added to the number of barrels under treatment to improve flow assurance.
• SHMS-9700	Green "sealing" compound that penetrates the pores of the metal surface and creates a thin, protective coating that prevents corrosion for extended time frames.	Coating of metal surfaces to prevent rust.
• SHRR-9500	Remove NORM radiation from surfaces including hard surface. Can be combined with one of the green acid products to address contaminated deposits.	Designed to address NORM contaminated solids, solutions, and surfaces.
• SHAR-9200	Green, non-aromatic, plant-derived ingredient based asphaltene remover and solvent.	Oil & Gas production, surface and downhole treatment programs.
• SHSF-1200	Green, nanotechnology-based formulation that removes oil from any surface without any emulsification allowing for easy separation.	Desorbing hydrocarbons from any media, equipment cleaning, wellbore clean up, wet well / lift station cleaning, heavy crude transport in pipelines, and soil washing.
• SHSB-9100	Non-toxic, non-flammable, Environmentally benign flocculating agent.	Precipitate out heavy metals from wastewater     Remove hydrocarbons, color and in some case BOD and salt from waste streams
• SHPA-9800	Down-hole and/or pipeline liquification chemistry designed for the removal and control of asphaltene and/or paraffin deposits.	<ul> <li>Paraffin control in gas and oil wells</li> <li>Asphaltene control in gas and oil wells</li> <li>Asphaltene/paraffin and mineral deposit clean-up</li> </ul>
• SHSCX-3111	Triple combination control; Iron, scale and corrosion control, powered by our proprietary NRGMAX technology.	Multi-functional down-hole control



### **WHY SHOTWELL?**



#### **LOCATION**

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



## LEADING-EDGE FACILITY

- Fully Automated
- ► ISO9001:2015 certified
- NSF certified
- A team with 75+ years of combined experience



#### QUALITY

- ► Blend capability up to 57.6M gallons per year
- ► Manufacture 500,000 gallons of surfactant/month
- Stringent Quality
   Control and Quality
   Assurance Standards



#### **SERVICE**

- Reliable technical and lab support
- 24x7 Logistical Support
- ► Transport bulk 330gallon totes or ISO containers to field

