

The STEP-HG hydrocarbon gellant system is designed to be used with refined oils as the base fluid to create a viscous frac gel. STEP-HG is compatible with a wide variety of base fluids, although clear fluids display higher viscosity profiles and behave in a more consistent manner. The system is made up of two main components; SHCG-1 (STEP Hydrocarbon Gellant) and SHCX-1 (STEP Hydrocarbon X-Linker). In addition, a breaker (SHCB-1), and a non-emulsifying surfactant (SHCBNE-1) are run with the system.

Hydrocarbon frac fluids have the benefit of being non-damaging to water sensitive formations. They will not induce clay swelling or migration of reservoir material, and will not contribute to water blockage of pore throats. The use of SCHBNE-1 will prevent the formation of emulsions with formation brines.

Properties:

- Reduces water usage
- Suitable for use in water sensitive formations
- Ideal for use with a refined hydrocarbon as the base, however these products are also capable of gelling crude oil
- Operationally easy-to-use
- Very low residue system, and formation friendly
- Stable up to 120°C
- Compatible with CO₂ for tight gas reservoirs
- Breaker loadings may vary with base fluid type and reservoir temperature. *Contact the lab to confirm*

Technical Data:

Recommended Gel Loadings and Viscosities (clear frac oil)

Temperature °C	Viscosity cP @ 100s ⁻¹		Viscosity cP @ 100s ⁻¹		Viscosity cP @ 100s ⁻¹	
	SHCG-1	4 L/m ³	SHCG-1	6 L/m ³	SHCG-1	8 L/m ³
	SHCX-1	3.2 L/m ³	SHCX-1	4.8 L/m ³	SHCX-1	6.4 L/m ³
45	205		460		500	
60	200		470		610	
75	185		440		590	
90	190		370		470	

Example Gel Loadings and Viscosities (dark frac gel)

Temperature °C	Viscosity cP @ 100s ⁻¹		Viscosity cP @ 100s ⁻¹		Viscosity cP @ 100s ⁻¹	
	SHCG-1	4 L/m ³	SHCG-1	6 L/m ³	SHCG-1	8 L/m ³
	SHCX-1	3.2 L/m ³	SHCX-1	4.8 L/m ³	SHCX-1	6.4 L/m ³
45	100		170		290	
60	100		230		380	
75	110		310		500	
90	120		340		520	