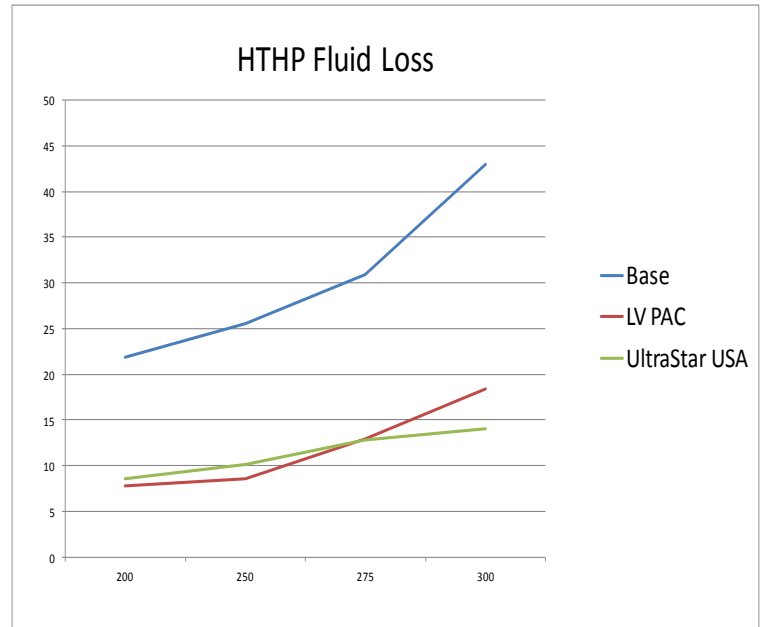


UltraStar USA is Carboxymethyl Starch or Poly Anionic Starch. It is manufactured as a fluid loss control agent for water based drilling fluids. UltraStar USA is crosslinked and this provides greater tolerance to heat, shear and salts compared to un-crosslinked carboxymethyl starches and some PACs.

## Properties

UltraStar USA provides fluid loss control over a wide range of temperature and conditions. The product is designed as an economical alternative to CMC or PAC products. The crosslinking in the UltraStar USA produces better temperature and shear performance than PACs, particularly LV PAC's. It can be used in combination with PAC/CMC as a low cost extender and there is reported evidence that a synergy can exist between Carboxymethyl starch and PAC producing better results than either individually. It is common to use a 1:1-3:1 ratio of UltraStar USA to PAC. UltraStar USA is effective over a wide temperature range and is tolerant to temperatures of 300\*f and above. The crosslinking also provides better salt tolerance for use in high salt mud's. The high level of modification on the UltraStar USA also offers effective protection against biological attack and a biocide is neither contained nor required.



UltraStar USA is effective at low concentrations ranging from 0.5 PPB (0.71kg/CM). Down hole, the UltraStar USA forms a thin resilient low permeable filter cake which minimizes the potential for differential sticking, and the invasion of damaging filtrate and mud into the formation.

### Characteristics

- Appearance Off White Powder
- Ionic Character Anionic
- Moisture <12%
- pH 8-10
- Density 1.5

### Applications

- Oil and Gas Drilling

### Environmental

- Fully biodegradable

### Packaging and Product Form

- 50 lb paper sacks