



# CSES-A200

## TECHNICAL DATA SHEET

### **PRODUCT DESCRIPTION: Oil & Gas Well & Formation Treatment**

*CSES-A200* is a patent-pending formulation designed to replace conventional hydrochloric acid-based frac blends, including formulations that contain corrosion inhibitors, iron dispersants, surfactants and other specialty additives. As you can see in the “Corrosion” section below, this product provides corrosion protection far above the conventional “non-corrosive” classification, even at elevated temperatures. Additionally, *CSES-A200* accomplishes this performance without the use of any reportable ingredients, product hazards or any volatile/hazardous decomposition products.

### **APPLICATIONS**

- Acid Stimulation on older wells: Cleans near bore at perforations in vertical wells. Opens new fractures and flow paths in open hole and slotted, linear, horizontal wells.
- Acid frac on new wells and re-frac on older wells.
- Treatment of injection wells, opening new fractures and flow paths.
- Coil Tubing Clean-outs.
- Change permeability from low to high in key reservoirs.
- Release stuck tools, pumps, etc.
- Increase efficiency of EOR applications

Consult your technical representative for specific, application recommendations.

### **FEATURES & BENEFITS**

- Contains No Reportable Frac Ingredients
- Non-Corrosive & Non-Fuming
- No Special Feed Equipment Required
- Does not Contain any Ingredients Listed as Toxic Chemical in Section 313 of EPCRA
- No Ingredients which would cause it to be listed as “Contaminant” under Safe Drinking Water Act.
- Low Toxicity: <10 mg/L LC50
- Carries a Triple-Zero HMIS Hazard Rating
- Can be Augmented with Micro-Emulsion
- Non Skin Irritant
- Biodegradable: <20% & <70% in 28 days (OECD 301A or 301E); 100% biodegradable
- Does not contain any Ingredients Listed as Extremely Hazardous Substance in Section 302 of EPCRA
- Does not contain any ingredients on EPA’s VOC list.

**TYPICAL PHYSICAL PROPERTIES**

- Appearance .....Liquid
- Color .....Clear to slightly yellow-orange
- Odor .....None
- Solubility..... 100%
- pH Neat ..... <1.0
- Density .....9.01 lbs/gal
- Boiling Point .....100°C
- Freezing Point .....-16°F

**STORAGE AND HANDLING**

Ingredients not precisely identified are non-hazardous. Do not ingest. May cause sickness if ingested in large quantities. Prolonged contact with skin may cause slight irritation. Safety glasses and gloves, as a minimum, are recommended when handling. Keep Container closed when not in use. Store product in a dry and cool area. Refer to the *CSES-A200* Safety Data Sheet (SDS) for other safety and handling information.

**PACKAGING**

*CSES-A200* is shipped from the manufacturing facility and regional distribution centers in 55 gallon and 265 gallon containers. Bulk quantities are available upon request.

**CORROSION DATA**

D.O.T. classifies a material (chemical) to be “Corrosive” if it has a corrosion rate that exceeds 6.25 mmpy on SAE C1020 Carbon Steel. This test protocol however, is for a very short duration (<2 hours) and at ambient temperatures. Unfortunately for the Oil & Gas Industry, when the corrosion rate of most of these “Non-Corrosive” substances is evaluated at longer durations (>2 hours) and/or at elevated temperatures, corrosion rates significantly exceed desirable levels. *CSES-A200*, on the other hand, is not only non-corrosive when evaluated via conventional measures, it is non-corrosive even at elevated temperatures. Furthermore, corrosion is almost non-detectable at these elevated temperatures, making it very advantageous for use under conditions typically experienced in the Oil & Gas industry.

Description	Initial wgt	% wgt change	24 hours	change	% wgt change	48 hours	change	Total change	% wgt change
15% HCl No inhibitor	16.9468	0.0%	4.589	12.3578	72.9%	4.5431	0.0459	12.4037	73.2%
15% HCl & Commercial Inhibitor	16.4696	0.0%	10.7279	5.7417	34.9%	6.327	4.4009	10.1426	61.6%
CSES-A200	15.7208	0.0%	15.6792	0.0416	0.3%	15.6473	0.0319	0.0735	0.5%

Description	initial wgt	6 hours	24 hours	change	% change	48 hours	change	Total change 48 hrs	Total change % 48 hrs
HCL 2.13 M	20.4367	14.5373		5.8994	28.9%				
CSES-A200-Low Temp	16.7185		10.3496	6.3689	38.1%	10.2443	0.1053	6.4742	38.7%
CSES-A200-High Temp (120-210F)	16.4848		16.4064	0.0784	0.5%	16.2642	0.1422	0.2206	1.3%