

# Twin HCR FG

## MODIFIED ACID ANTI-SCALANT & DESCALANT

### TWIN HCR FG

Twin HCR FG is part of the “Environmentally Responsible” Modified Acid product line that minimizes hazardous exposure levels, corrosion rates and negative HS&E properties of HCl while providing a highly effective alternative to standard 15% HCl systems.

Twin HCR FG is a powerful, low fuming Modified Acid™ that is a broad spectrum anti-scalant and descalant with an immediate and comprehensive spend specifically formulated for water streams with high levels of oxides, silica, and scale forming minerals.

### FEATURES & BENEFITS

- Effective anti-scalant & descalant for majority of water applications
- Effective for broad range of scale
- Controls polymerization and precipitation of silica
- Controls inorganic scale over a large concentration range including calcium and calcium sulfate scales
- Decreases precipitation of aluminum, iron, and heavy metal salts
- Non-corrosive to skin tissue
- Ultra-low long term corrosion effects
- Compatible with typical elastomers
- Class 1 acid package
- High thermal stability
- Readily Biodegradable (OECD 306)
- NSF Approved

### TYPICAL PHYSICAL PROPERTIES

Appearance	Amber Liquid
Specific Gravity	1.10
Freezing Point	-58°F (-50°C)
Boiling Point	> 212°F (100°C)
pH	< 1.0
Odor	Slight
Salinity	~ 30%
Solubility in Water	Complete
Thermal Stability	350°F (176°C)
Shelf Life	> 1 year
CaMg(CO <sub>3</sub> ) <sub>2</sub> Solubility	~ 1.6 lb./gal
CaCO <sub>3</sub> Solubility	~ 1.8 lb./gal
FeS Solubility	~ 1.1 lb./gal



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The information contained on this data sheet is believed to be reliable. Since the conditions of application and use of our products are beyond our control, no warranty is expressed or implied regarding accuracy of the information, the results obtained from the use of the product, or that such use will not infringe on any patent. This information is furnished with the express condition that you will conduct your own tests to determine the suitability of the product for your particular use.

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#### CORROSION

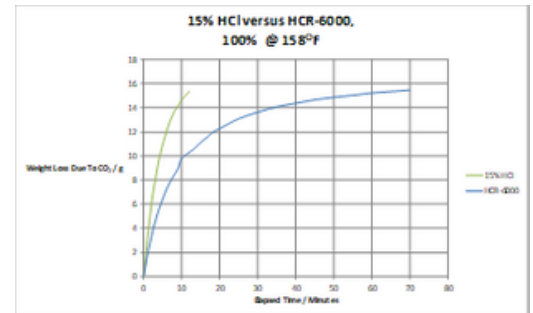
Twin HCR FG is able to achieve corrosion rates on any typical grade steels well below traditional acid systems.

Blend	Temp	Coupon	Time	Corrosion
50% HCR-6000	230°F	N-80	6 hours	0.014 lb/ft <sup>2</sup>
50% HCR-6000	230°F	J-55	6 hours	0.008 lb/ft <sup>2</sup>
50% HCR-6000	230°F	Q,T-800	6 hours	0.009 lb/ft <sup>2</sup>
50% HCR-6000	230°F	Q,T-900	6 hours	0.007 lb/ft <sup>2</sup>
50% HCR-6000	230°F	Q,T-1000	6 hours	0.005 lb/ft <sup>2</sup>
50% HCR-6000	266°F	N-80	6 hours	0.018 lb/ft <sup>2</sup>
50% HCR-6000	266°F	J-55	6 hours	0.022 lb/ft <sup>2</sup>
50% HCR-6000	266°F	Q,T-800	6 hours	0.022 lb/ft <sup>2</sup>
50% HCR-6000	266°F	Q,T-900	6 hours	0.018 lb/ft <sup>2</sup>
50% HCR-6000	302°F	Q,T-800	6 hours	0.006 lb/ft <sup>2</sup>
50% HCR-6000	302°F	Q,T-900	6 hours	0.034 lb/ft <sup>2</sup>
50% HCR-6000	302°F	L-80	4 hours	0.017 lb/ft <sup>2</sup>
50% HCR-6000	392°F	L-80	2 hours	0.033 lb/ft <sup>2</sup>
50% HCR-6000	428°F	L-80	2 hours	0.031 lb/ft <sup>2</sup>

#### SCALE SOLUBILITY

Twin HCR FG has a more "methodical and comprehensive" reaction rate (spend nature) than 15% HCl and will provide you with superior formation penetration as well as minimize precipitation tendencies.

Blend	Scale	Total Solubility lb/gal
100% 6000	Calcium Carbonate	1.84
50% 6000	Calcium Carbonate	1.08
100% 6000	Dolomite	1.67
50% 6000	Dolomite	1.08
100% 6000	Iron Sulfide	1.08
50% 6000	Iron Sulfide	0.58



#### SAFETY, STORAGE & HANDLING

- Twin HCR FG is considered non-regulated for ground transport in the US, exemption 49CFR 173.154(d)
- Store in sealed drums or IBC totes
- HDPE, brass or stainless steel fittings and valves should be used
- Consult SDS for additional information and PPE requirements

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