Product Bulletin

Oil Pro ACI-1

Acid Corrosion Inhibitor

PRODUCT DESCRIPTION

Oil Pro ACI-1 is a medium temperature acid corrosion inhibitor suitable for use in 15% HCl, 28% HCl and mixtures of HCl/HF. Oil Pro ACI-1 exhibits excellent solubility and is effective in inhibiting corrosion on low alloy steels, such as N-80, L-80 and J-55, and corrosion resistant alloys, such as 13Cr. Oil Pro ACI-1 is effective to 375°F using standard corrosion inhibitor intensifiers.

PHYSICAL PROPERTIES

Color	Clear, light amber
Charge	Nonionic/Cationic in acid
Specific Gravity (g/mL)	0.89
Solubility	Dispersible
Freezing Point (°F/°C)	-20/28.9
Flash Point (°F/°C)	50/10

PACKAGING

Oil inhibitor is available in 55 gallon drums, and 275 gallon totes. Samples are available by contacting OSI.

USAGE AND MIXING RECOMMENDATIONS

Oil Pro ACI-1 is recommended for use in very low pH fluids containing HCl. Oil Pro ACI-1 is not for use in weak acids (acetic acid, formic acid, etc.). Oil Pro AC-1 is added to acid blends at concentrations of 0.5 gpt (gallons per thousand) to 20 gpt. At higher temperatures a corrosion inhibitor intensifier is also required. In acid blends containing only Oil Pro ACI-1 and acid, the inhibitor is generally added to the water with stirring, followed by addition of the concentrated acid. When other additives are used in the blend, the appropriate mix order will need to be determined experimentally.

CORROSION DATA

The following tables of corrosion data are presented as guidelines only for the use of Oil Pro ACI-1. Data were generated by the weight loss method for 15% HCl and 28% HCl on N80/L-80 steel. No additives, other than inhibitor and intensifier, were incorporated. Other additives may decrease the effectiveness of corrosion inhibitor in acid blends and should be corrosion tested before application. Steel compositions vary and it is always recommended to corrosion test on the actual metallurgy before use of this product

Table 1. Corrosion Testing in 15% HCl
N-80/L-80 Steel

Temp. (°F)	Pressure (psi)	ACI-1 Conc. (gpt)	Time @ Temp. (hrs)	Corrosion Loss (lb/ft^2)
125	atmospheric	0. 5	6	0.002
	"	1.0	16	0.003
	"	1.0	24	0.004
150	"	1.0	6	0.005
	"	1.0	16	0.007
	"	1.0	24	0.006
175	"	1.0	6	0.007
	"	1.0	16	0.012
	"	2.0	24	0.012
200	"	2.0	6	0.009
	"	5.0	16	0.016
	"	6.0	24	0.011
225	1000	8.0	6	0.015
	"	12.0	16	0.023
	"	20.0	24	0.035
	"	15.0‡	24	0.014
250	1000	12.0	6	0.039
	"	10.0‡	6	0.020
	"	15.0‡	16	0.023
	"	20.0ɣ	24	0.028
275	1000	20.0	6	0.050
	"	12.0‡	6	0.030
	"	20.0 ɣ	16	0.036
300	1500	20.0§	6	0.029
325	1000	20.0μ	5	0.008
350	1000	30.0∫	4	0.014
375	1000	20.0∫	6	0.043*

*pitting

‡10 gpt formic acid intensifier included

ɣ15 gpt formic acid intensifier included

§40 gpt formic acid intensifier included

μ15 gpt antimony-based intensifier included ∫20 gpt antimony-based intensifier included

Table 2. Corrosion Testing in 28% HCl
N-80/L-80 Steel

Temp. (°F)	Pressure (psi)	ACI-1 Conc. (gpt)	Time @ Temp. (hrs)	Corrosion Loss (lb/ft^2)
125	atmospheric	1.0	6	0.006
	"	2.0	16	0.005
	"	2.0	24	0.006
150	"	2.0	6	0.007
	"	2.0	16	0.013
	"	2.0	24	0.020
175	"	3.0	6	0.010
	"	3.0	16	0.043
	"	4.0	16	0.036
	"	5.0	24	0.075
	"	8.0	24	0.026
200	"	5.0	6	0.013
	"	15.0	16	0.028
	"	20.0	24	0.029
225	1000	20.0	6	0.071
	"	20.0‡	6	0.016
	"	20.0¥	16	0.024
250	1000	20.0£	6	0.032
275	1000	20.0§	2	0.027
	"	20.0§	3	0.053
	1700	20.0α	6	0.058

‡10 gpt formic acid intensifier included

¥20 gpt formic acid intensifier included

£30 gpt formic acid intensifier included

§40 gpt formic acid intensifier included

α60 gpt formic acid intensifier included

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