



ACID DEW POINT (ADP) & CORROSION RATES

INDICATIVE VALUES FOR GAS AND OIL FIRING
(NOT VALID FOR COAL FIRING)

H ₂ O Vol%	O ₂ Vol%	Excess Air	Fuel Type	S in fuel ppm WT	S in fuel WT%	SO _x (as SO ₂) ppm Vol	NEW / CLEAN SO ₃ ppm Vol	ADP °F	OLD / DIRTY SO ₃ ppm Vol	ADP °F	Approx. Corrosion Rate Inch/Year								
17	1.7	10%	Pipeline gas quality	0.1	0.00001	0.006	0.0003	142	0.0005	150	-								
				1	0.0001	0.06	0.003	170	0.005	180	-								
				10	0.001	0.6	0.026	201	0.053	210	-								
				20	0.002	1.1	0.048	209	0.096	218	0.001								
				50	0.005	2.2	0.095	218	0.19	227	0.002								
				100	0.01	4.5	0.19	227	0.39	237	0.004								
				200	0.02	9.0	0.39	236	0.77	246	0.008								
				500	0.05	23	0.96	249	2.0	258	0.024								
				1000	0.1	45	1.9	258	3.9	267	0.031								
				2000	0.2	90	3.7	266	7.7	276	0.035								
11.2	2.6	15%	Oil #1	5000	0.5	250	12	273	26	283	0.055								
				9.8	3.3	20%	Oil #2	10000	1.0	520	27	281	59	292	0.083				
								20000	2	1000	48	289	110	300	0.114				
								9	4.0	25%	Oil #4,5,6	50000	5	2600	100	297	260	310	0.177
												100000	10	5400	170	298	520	320	0.236

SULFUR-FREE FUEL

A sulfur content below 20ppm WT in fuel (or a SO_x content below 1ppm Vol in fluegas) may be neglected.

NEW/CLEAN vs. OLD/DIRTY

In new/clean equipment condition the secondary conversion of SO₂ to SO₃ does take place in the temperature range of 1650-750°F through contact with metallic surfaces. This secondary conversion has a significant contribution to SO₃ formation and should not be neglected.

When the equipment is in old/dirty condition this secondary conversion increases due to the catalytic effect of the fouling. In this case the concentration of SO₃ and ADP are accordingly higher.

APPROXIMATE CORROSION RATES

The indicative values are valid for most metallic constructions when the metal temperature is below ADP and surface is kept clean.

In practice acid condensation may result in dirt accumulation and wet deposits. When cleaning is not done or is not effective, the corrosion rates may be higher than indicated.

ACCURATE CALCULATION

Use COMBUST2000™ or DewPoint2000™ program.