Gas Treating Solvent Analysis Report

Sample Information

Company:				Sample Number:	
Location:				Sample Date:	April 13, 2007
System Name:	Systems 2			Received Date:	June 20, 2007
Amine:	MDEA	Mol. Wt. =	119.16	Completion Date:	June 27, 2007
Company ID:	Initial System Sample			System Volume:	70 m^3

Solvent Components

Total Amine Bases	3.458 eq/kg	41.21% %(m) as MDEA		Water by KF	55.84% (m)
Total MDEA	3.458 eq/kg	41.21% %(m) as MDEA			
Free MDEA	36.29% (m)				
Bound MDEA	4.92% (m)			Bound MDEA Observed	5.3% (m)

Solvent Impurities

Heat Stable Salt Anions	21801 ppm(m)		Warning				
Heat Stable Salt Anions	5.53% as MDEA						
HSAS	4.64% as MDEA			Amino Acids, total		0.268% as Bicine (m)	High
HSS/Total Amine	0.1343 mol/mol			Bicine		0.014% (m)	OK
Strong Cations	1717 ppm(m) as Sodium		High	H_2S	266 ppm(m)	0.0023 mol/mol	
Petroleum Hydrocarbons	228 ppm(m)		Warning	CO_2	689 ppm(m)	0.0045 mol/mol	
Suspended Solids	112 mg/L		High	Total Lean Loading		0.0068 mol/mol	

Heat Stable Salt Anion Speciation

Weak Acid Anions			Strong Acid Anions	
Glycolate	328 ppm(m)		Oxalate	<10 ppm(m)
Formate	17102 ppm(m)		Nitrate	67 ppm(m)
Acetate	400 ppm(m)		Chloride	372 ppm(m)
Propionate	<10 ppm(m)		Thiocyanate	3016 ppm(m)
Butyrate	<10 ppm(m)		Sulfate	352 ppm(m)
Ferrocyanate	<10 ppm(m)		Sulfite	0 ppm(m)
			Thiosulfate	302 ppm(m)
Total Weak Anions	17830 ppm(m)		Total Strong Anions	4108 ppm(m)
Unspeciated Anions	0 ppm(m)	@ avg MW = 46.95		

Physical Properties

pH	9.70		Foaming Tendency	83.00	ml
Viscosity	5.62 cP	@ 21 °C	Break Time	12.30	seconds
Density	1.055 g/mL		Foaming Potential Rating	4.00	(See foaming scale below)
Conductivity	6.67 mS				
Appearance	clear dark green liquid with few particles and hydrocarbon odor with a sheen indicative of hydrocarbons				

Mass Balance	99.8 %	Strong Cations/HSS, mol/mol	0.1609 High

na = not analysed
nd = none detected

Foaming Potential Rating Scale
0-2 are probably not producing measurable symptoms unless there are equipment problems such as fouling, mechanical damage, etc.
3-4 are producing measurable symptoms in the testing equipment, and need to be watched.
5-6 are, based on past experience, marginal at best, and may need operational intervention such as antifoam addition or surfactant removal to stabilize the solution.
6-10 are "problem" solutions, and most likely need immediate operational intervention and/or surfactant removal to stabilize performance.