Regarding stability of mixed refrigerants

Stability when coexisting with metals, lubricants

The stability of refrigerants, when together with metals and lubricants, has a tendency to deteriorate as compared with refrigerants on their own.
The stability of mixed refrigerants, when together with metals and lubricants, is high as compared with those of R-22 and R-502.

175°C x 14 days

Refrigerant			R-410A	R-407C	R-404A	R-507A	R-22	R-502
Lubricant			POE	POE	POE	POE	Mineral oil	Mineral oil
Refrigerant	Acid content	(ppm, asHCl)	<1	<1	<1	<1	30	5
Lubricant	Chromaticity	(ASTM)	L1.5	L1.5	L1	L1	L2	L2
	Total acid number	(mgKOH/g)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Metal	SS-400	(mg/dm^2/day)	<1	<1	<1	<1	<1	<1
	Cu	(mg/dm^2/day)	<1	<1	<1	<1	<1	<1
	Al	(mg/dm^2/day)	<1	<1	<1	<1	<1	<1

nitial characteristics of lubricant POE (Polyol ester) oil : Chromaticity L0.5, total acid number < 0.01mgKOH/g
Mineral oil : Chromaticity I0.5, total acid number < 0.01mgKOH/g

Refrigerant		R-410A	R-410A	R-410A	R-507A	R-507A	R-507A
Lubricant		Mobil	Mobil	Castrol	Mobil	Mobil	Castrol
		EAL 22	EAL 32	SW22	EAL 22	EAL 32	SW22
		(POE)	(POE)	(POE)	(POE)	(POE)	(POE)
Refrigerant	Purity	No changes	No changes	No changes	No changes	No changes	No changes
	F[μg]	<10	<10	10	12	<10	13
Lubricant	Appearance	No changes	No changes	No changes	No changes	No changes	No changes
Metal	SS	No changes	No changes	No changes	Slight copper color in liquid phase	No changes	No changes in liquid phase Slight black stain in gas phase
	Cu	No changes	No changes	No changes	No changes	No changes	No changes
	Al	No changes	No changes	No changes	No changes	No changes	No changes