Asahi Flon-22 hydrolytic stability

・Although Asahi Flon-22 is an extremely chemically stable substance and it doesn't directly react to water and metal, in the case of long-term use,
particularly when coexisting with metal, a small amount of hydrolysis due to moisture takes place and acidic compounds are created (hydrochloric acid, hydrofluoric acid, etc.) which leads to metal corrosion.
・The rate of hydrolysis varies greatly depending on the temperature and pressure conditions and the other coexisting substances and the like.
Although the hydrolysis rate is extremely small under atmospheric conditions when contacting only water, if it coexists with steel, it becomes much higher at high temperature under saturation pressure.
・Generally, the hydrolysis amount is higher in gas phase than liquid phase, and since when excess moisture exists, the free moisture floats on the refrigerant liquid surface, corrosion appears above the liquid surface line.
When moisture doesn't exist, there tends to be almost no corrosion.

Asahi Flon-22 hydrolysis rate

Coexisting conditions	Hydrolysis rate at 1atm, 30°C gR22/dm^{3}H2O/year
Water only	0.01
Water and copper	0.02
Water and aluminium	0.09
Water and zinc	0.1
Water and iron	0.12
Sodium hydroxide (1%)	0.6

Effect of moisture on the stability of Asahi Flon-22

Temperature °C	Time days	Asahi Flon-22 decomposition rate (%)						
		Moisture						
		5ppm	10ppm	20ppm	40ppm	110ppm	320ppm	570ppm
120	440	<0.01	<0.01	<0.01	<0.01	0.01	0.01	0.01
150	440	0.03	0.02	0.03	0.04	0.04	0.04	0.04