MiKamachi Inc.

Flow tube Construction	Fluid Characteristics(1)						
	Clean	Mild Corro-sion	Severe Corro-sion	Mild Abra-sion	Severe Abra-sion	Mild Corrosion & Abrasion	Sanitary
ptfe / pfa Lining	A	A	A	B	X	B	A(2)
Sanitary (ptfe)	A	A	A	B	X	B	A(3)
Polyurethane	A	B	X	A	A	B	X
Neoprene	A	A	X	A	X	A	X
Ceramic	A	A	A	A	A	A	A(2)
Ceramic (Sanitary)	A	A	A	A	A	A	A(3)

Character	Description
"A"	Prefered Material - Virtually Unlimited Life. Should be considered as first choice. Where more than one material is rated "A", user should select based on own personal experience or knowledge
"B"	B = Satisfactory Material - Resonable Life under Most Conditions. Considered if an "A" rated option is not available.
"C"	Occasionally Used - Some Wear or Corrosion expected. Life expectancy varies as a function of temperature, concentration, and/or velocity. Use with Caution
"X"	Not Recommended. This material definitely can be troublesome will not survive, or is unacceptable.
"-"	Sufficient information not available.
(%)	Percent concentration of process liquid
(oC)	Maximum recommended process temperature in °C

Process Liquid	Flow tube Lining				Electrode Material				
	PTFE	Poly	Neo	Cer	Plat	Tant	316 ss	Hast C	Titan
Acetaldehyde	A	X	X	A	A	A	A	A	A
Acetic Acid (30%)	A	X	B	A	A	A	A	A	A
Acetone & Water	A	X	B	A	A	A	A	A	A
Alum (10%)	A	-	B	A	A	A	B	B	A
Alumia	A	-	-	A	-	A	B	A	A
Aluminum Chloride (20%)	A	-	A	A	A	A	X	A	X
Aluminum Chlorohydrate	A	-	-	A	A	A	X	B	X
Aluminum Fluoride	A	-	B	B	A	X	X	X	X
Aluminum Hydroxide (20%)	A	-	-	A	A	B	B	B	A
Ammonium Nitrate	A	-	A	A	A	A	B	B	A
Aluminum Sulfate (<100 oC)	A	B	A	A	A	A	A	A	A
Ammonium Bicarbonate	A	-	-	A	A	A	B	B	A
Ammonium Bisulfate	A	-	A	A	A	A	X	X	A
Ammonium Carbonate	A	-	A	A	A	A	B	B	-
Ammonium Chloride (<50%)	A	A	A	A	A	A	X	C	A
Ammonium Fluoride (20%)	A	-	-	B	A	X	X	B	X
Ammonium Hydroxide	A	A	A	A	A	X	B	B	A
Ammonium Nitrate	A	B	A	A	A	A	B	B	X

MiKamachi Inc.

Flowtube Construction	Fluid Characteristics(1)						
	Clean	Mild Corro-sion	Severe Corro-sion	Mild Abra-sion	Severe Abra-sion	Mild Corrosion & Abrasion	Sanitary
ptfe /pfa Lining	A	A	A	B	X	B	A(2)
Sanitary (ptfe)	A	A	A	B	X	B	A(3)
Polyurethane	A	B	X	A	A	B	X
Neoprene	A	A	X	A	X	A	X
Ceramic	A	A	A	A	A	A	A(2)
Ceramic (Sanitary)	A	A	A	A	A	A	A(3)

Character	Description
"A"	Prefered Material - Virtually Unlimited Life. Should be considered as first choice. Where more than one material is rated "A", user should select based on own personal experience or knowledge
"B"	B = Satisfactory Material - Resonable Life under Most Conditions. Considered if an "A" rated option is not available.
"C"	Occasionally Used - Some Wear or Corrosion expected. Life expectancy varies as a function of temperature, concentration, and/or velocity. Use with Caution
"X"	Not Recommended. This material definitely can be troublesome will not survive, or is unacceptable.
"-"	Sufficient information not available.
(%)	Percent concentration of process liquid
(oC)	Maximum recommended process temperature in oC

Process Liquid	Flowtube Lining				Electrode Material				
	PTFE	Poly	Neo	Cer	Plat	Tant	316 ss	Hast C	Titan
Ammonium Persulfate	A	X	B	A	A	A	B	B	-
Ammonium Phosphate (20%)	A	-	B	A	A	A	B	B	A
Ammonium Sulfate (<70 oC	A	A	A	A	A	A	X	B	-
Barium Acetate	A	X	X	A	A	A	X	X	-
Barium Carbonate	A	-	-	A	A	A	C	B	A
Bariuum Chloride	A	A	A	A	A	A	X	B	B
Barium Hydroxide (<70oC)	A	A	A	B	A	X	B	B	-
Barium Sulfate	A	A	A	A	A	A	B	B	-
Barium Sulfide	A	A	B	A	A	A	X	-	A
Beer	A	A	A	A	A	A	A	A	A
Black Liquor	A	X	X	B	A	X	B	A	B
Borax Solution	A	A	B	A	A	A	A	A	A
Boric Acid	A	A	A	A	A	A	B	A	A
Brine	A	B	A	A	A	A	X	A	A
Calcium Bisulfite	A	A	A	A	A	A	B	B	A
Calcium Carbonate	A	-	-	A	A	A	B	B	A
Calcium Chlorate (dil.)	A	-	-	A	A	A	X	A	A
Calcium Chloride	A	A	A	A	A	A	X	A	A
Calcium Hydroxide (25%)	A	A	A	A	A	A	X	A	A

MiKamachi Inc.

Flowtube Construction	Fluid Characteristics(1)						
	Clean	Mild Corro-sion	Severe Corro-sion	Mild Abra-sion	Severe Abra-sion	Mild Corrosion & Abrasion	Sanitary
ptfe/pfa Lining	A	A	A	B	X	B	A(2)
Sanitary (ptfe)	A	A	A	B	X	B	A(3)
Polyurethane	A	B	X	A	A	B	X
Neoprene	A	A	X	A	X	A	X
Ceramic	A	A	A	A	A	A	A(2)
Ceramic (Sanitary)	A	A	A	A	A	A	A(3)

Character	Description
"A"	Prefered Material - Virtually Unlimited Life. Should be considered as first choice. Where more than one material is rated "A", user should select based on own personal experience or knowledge
"B"	B = Satisfactory Material - Resonable Life under Most Conditions. Considered if an "A" rated option is not available.
"C"	Occasionally Used - Some Wear or Corrosion expected. Life expectancy varies as a function of temperature, concentration, and/or velocity. Use with Caution
"X"	Not Recommended. This material definitely can be troublesome will not survive, or is unacceptable.
"-"	Sufficient information not available.
(%)	Percent concentration of process liquid
(oC)	Maximum recommended process temperature in oC

Process Liquid	Flowtube Lining				Electrode Material				
	PTFE	Poly	Neo	Cer	Plat	Tant	316 ss	Hast C	Titan
Calcium Hypochlorite (<70oC)	A	X	B	A	A	A	X	B	A
Calcium Nitrate	A	A	A	A	A	A	B	B	A
Calcium Sulfate	A	-	-	A	A	A	B	B	A
Caustic-See Sodium Hydroxide	-	-	-	-	-	-	-	-	-
Cheese	A	X	X	A	A	A	A	A	A
Chloroacetic Acid (100%)	A	X	-	A	A	A	X	B	A
Chlorine Dioxide	A	X	X	A	X	B	X	B	A
Chromic Acid (50%)	A	X	X	A	A	A	X	B	B
Chromium Sulfate (50%)	A	X	X	A	A	A	B	B	-
Clay Slurry	B	B	A	A	A	A	A	A	A
Coal & Water Slurry	C	A	A	A	A	A	B	A	A
Copper Chloride	A	A	A	A	X	A	X	B	A
Copper Cyanide	A	A	A	A	A	A	B	B	A
Copper Fluoride	A	-	-	B	A	X	X	X	-
Copper Nitrate	A	-	-	-	A	A	B	X	A
Copper Sulfate	A	A	A	A	A	A	B	A	B
Dairy Products	A	X	X	A	A	A	A	A	A
Dyes	A	-	-	A	A	A	A	A	A
Ferric Chloride (50%)	A	B	B	A	X	A	X	X	A
Ferric Nitrate (5%)	A	-	B	A	A	A	X	B	A

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Flowtube Construction	Fluid Characteristics(1)						
	Clean	Mild Corro-sion	Severe Corro-sion	Mild Abra-sion	Severe Abra-sion	Mild Corrosion & Abrasion	Sanitary
ptfe/pfa Lining	A	A	A	B	X	B	A(2)
Sanitary (ptfe)	A	A	A	B	X	B	A(3)
Polyurethane	A	B	X	A	A	B	X
Neoprene	A	A	X	A	X	A	X
Ceramic	A	A	A	A	A	A	A(2)
Ceramic (Sanitary)	A	A	A	A	A	A	A(3)

Character	Description
"A"	Prefered Material - Virtually Unlimited Life. Should be considered as first choice. Where more than one material is rated "A", user should select based on own personal experience or knowledge
"B"	B = Satisfactory Material - Resonable Life under Most Conditions. Considered if an "A" rated option is not available.
"C"	Occasionally Used - Some Wear or Corrosion expected. Life expectancy varies as a function of temperature, concentration, and/or velocity. Use with Caution
"X"	Not Recommended. This material definitely can be troublesome will not survive, or is unacceptable.
"-"	Sufficient information not available.
(%)	Percent concentration of process liquid
(oC)	Maximum recommended process temperature in oC

Process Liquid	Flowtube Lining				Electrode Material				
	PTFE	Poly	Neo	Cer	Plat	Tant	316 ss	Hast C	Titan
Ferric Sulfate	A	-	A	A	A	A	X	B	A
Ferrous Chloride (10%)	A	B	B	A	A	A	X	B	A
Ferrous Nitrate	A	-	-	A	A	A	X	B	A
Ferrous sulfate (10%)	A	X	B	A	A	A	X	B	A
Fluosilicic Acid (40%)	A	X	B	B	A	X	X	X	X
Formaldehyde (40%)	A	X	C	A	A	A	A	B	A
Formic Acid (50%, <40oC)	A	X	A	A	A	A	X	A	X
Green Liquor	A	X	X	A	A	X	B	A	A
Hydrobromic Acid (50%)	A	X	-	A	A	A	X	X	A
Hydrochloric Acid (38%, <60oC)	A	X	X	A	B	A	X	X	X
Hydrocyanic Acid (10%)	A	X	X	A	A	A	X	B	B
Hydrofluoric Acid (20%, <40oc)	A	X	X	B	A	X	X	X	X
Hydrofluosilicic (35%)	A	-	C	B	A	X	X	B	X
Hydrogen peroxide (50%)	A	X	B	A	A	A	B	A	B
Hypochlorous Acid (20%)	A	-	-	A	A	A	X	X	A
Latex	A	X	X	A	A	A	A	A	A
Lead Acetate	A	X	C>	A	A	A	B	B	B
Limestone Slurry	A	A	A	A	A	A	A	A	A

MiKamachi Inc.

Flowtube Construction	Fluid Characteristics(1)						
	Clean	Mild Corro-sion	Severe Corro-sion	Mild Abra-sion	Severe Abra-sion	Mild Corrosion & Abrasion	Sanitary
ptfe / pfa Lining	A	A	A	B	X	B	A(2)
Sanitary (ptfe)	A	A	A	B	X	B	A(3)
Polyurethane	A	B	X	A	A	B	X
Neoprene	A	A	X	A	X	A	X
Ceramic	A	A	A	A	A	A	A(2)
Ceramic (Sanitary)	A	A	A	A	A	A	A(3)

Character	Description
"A"	Prefered Material - Virtually Unlimited Life. Should be considered as first choice. Where more than one material is rated "A", user should select based on own personal experience or knowledge
"B"	B = Satisfactory Material - Resonable Life under Most Conditions. Considered if an "A" rated option is not available.
"C"	Occasionally Used - Some Wear or Corrosion expected. Life expectancy varies as a function of temperature, concentration, and/or velocity. Use with Caution
"X"	Not Recommended. This material definitely can be troublesome will not survive, or is unacceptable.
"-"	Sufficient information not available.
(%)	Percent concentration of process liquid
(oC)	Maximum recommended process temperature in oC

Process Liquid	Flowtube Lining				Electrode Material				
	PTFE	Poly	Neo	Cer	Plat	Tant	316 ss	Hast C	Titan
Lithium Chloride (50%)	A	-	-	A	A	A	X	A	A
Magnesium Carbonate	A	-	-	A	A	A	B	B	A
Magnesium Chloride (5%)	A	B	B	A	A	A	B	A	A
Magnesium Hydroxide	A	B	B	A	A	A	B	B	A
Magnesium Nitrate	A	-	-	A	A	A	B	B	B
Manesium Sulfate	A	->	A	A	A	A	A	A	A
Mercuric Chloride (50%)	A	-	B	A	A	A	X	X	A
Milk	A	X	X	A	A	A	A	A	A
Molasses	A	X	X	A	A	A	A	A	A
Nickel Chloride	A	-	B	A	A	A	X	B	A
Nickel Nitrate	A	-	-	A	A	A	B	B	B
Nickel Sulfate	A	A	A	A	A	A	B	B	B
Nitric Acid (40% <60oC)	A	X	X	A	A	A	A	X	A
Nitric Acid (70%, <40oC)	A	X	X	A	A	A	B	X	X
Oleum	A	X	X	A	A	X	C	B	X
Paper Stock	A	X	X	A	A	A	A	A	A
Phosphate Slurry	A	A	-	A	A	A	C	A	A
Phosphoric Acid (25%, <60oC)	A	B	B	A	A	A	A	A	X
Phosphoric Acid (85%, <60oC)	A	B	B	X	A	A	X	B	X

MiKamachi Inc.

Flowtube Construction	Fluid Characteristics(1)						
	Clean	Mild Corro-sion	Severe Corro-sion	Mild Abra-sion	Severe Abra-sion	Mild Corrosion & Abrasion	Sanitary
ptfe / pfa Lining	A	A	A	B	X	B	A(2)
Sanitary (ptfe)	A	A	A	B	X	B	A(3)
Polyurethane	A	B	X	A	A	B	X
Neoprene	A	A	X	A	X	A	X
Ceramic	A	A	A	A	A	A	A(2)
Ceramic (Sanitary)	A	A	A	A	A	A	A(3)

Character	Description
"A"	Prefered Material - Virtually Unlimited Life. Should be considered as first choice. Where more than one material is rated "A", user should select based on own personal experience or knowledge
"B"	B = Satisfactory Material - Resonable Life under Most Conditions. Considered if an "A" rated option is not available.
"C"	Occasionally Used - Some Wear or Corrosion expected. Life expectancy varies as a function of temperature, concentration, and/or velocity. Use with Caution
"X"	Not Recommended. This material definitely can be troublesome will not survive, or is unacceptable.
"-"	Sufficient information not available.
(%)	Percent concentration of process liquid
(oC)	Maximum recommended process temperature in oC

Process Liquid	Flowtube Lining				Electrode Material				
	PTFE	Poly	Neo	Cer	Plat	Tant	316 ss	Hast C	Titan
Potassium Aluminum Sulfate	A	X	B	A	A	A	B	B	A
Potassium bicarbonate	A	-	-	A	A	A	B	B	-
Potassium Carbonate	A	-	-	A	A	X	B	A	A
Potassium Chloride	A	X	A	A	A	A	X	A	A
Potassium Dichromate	A	B	A	A	A	X	B	B	A
Potassium Hydroxide (<50%, 40oC)	A	B	B	A	A	X	B	B	X
Potassium Nitrate	A	X	A	A	A	A	B	B	A
Potassium Permanganate	A	-	-	A	A	A	B	B	B
Potassium Persullate (10%)	A	-	-	A	A	A	A	B	A
potassium sulfate	A	X	A	A	A	A	A	B	A
Sewage, Raw	A	A	B	A	A	A	A	A	A
Sea Water	A	A	A	A	A	A	X	A	A
Silver Nitrate	A	-	-	-	A	A	B	C	A
Sludge, Activated	A	A	A	A	A	A	A	A	A
Sludge, Primary	A	A	A	A	A	A	A	A	A
Sludge, Thickened	A	A	A	A	A	A	A	A	A
Sludge, Waste	A	A	A	A	A	A	A	A	A
Sodium Acetate	A	X	C	A	A	A	B	A	A
Sodium Bicarbonate	A	-	A	A	A	A	B	B	-
Sodium Bisulfate	A	-	-	A	A	A	X	C	A

MiKamachi Inc.

Flowtube Construction	Fluid Characteristics(1)						
	Clean	Mild Corro-sion	Severe Corro-sion	Mild Abra-sion	Severe Abra-sion	Mild Corrosion & Abrasion	Sanitary
ptfe/pfa Lining	A	A	A	B	X	B	A(2)
Sanitary (ptfe)	A	A	A	B	X	B	A(3)
Polyurethane	A	B	X	A	A	B	X
Neoprene	A	A	X	A	X	A	X
Ceramic	A	A	A	A	A	A	A(2)
Ceramic (Sanitary)	A	A	A	A	A	A	A(3)

Character	Description
"A"	Prefered Material - Virtually Unlimited Life. Should be considered as first choice. Where more than one material is rated "A", user should select based on own personal experience or knowledge
"B"	B = Satisfactory Material - Resonable Life under Most Conditions. Considered if an "A" rated option is not available.
"C"	Occasionally Used - Some Wear or Corrosion expected. Life expectancy varies as a function of temperature, concentration, and/or velocity. Use with Caution
"X"	Not Recommended. This material definitely can be troublesome will not survive, or is unacceptable.
"-"	Sufficient information not available.
(%)	Percent concentration of process liquid
(oC)	Maximum recommended process temperature in oC

Process Liquid	Flowtube Lining				Electrode Material				
	PTFE	Poly	Neo	Cer	Plat	Tant	316 ss	Hast C	Titan
Sodium Bisulfate (40%, 40oC)	A	-	A	A	A	A	B	B	B
Sodium Borate (Borax	A	-	B	A	A	A	B	A	A
Sodium Carbonate (<20%)	A	-	-	A	A	B	A	A	A
Sodium Chlorate	A	-	-	A	A	A	C	B	A
Sodium Chloride	A	-	B	A	A	A	X	A	A
Sodium Chloride (10%, 30oC)	A	-	-	B	B	A	X	B	A
Sodium Cyanide	A	-	B	A	A	A	X	B	A
Sodium Hydroxide (5%, <50oC)	A	X	X	A	A	X	A	A	A
Sodium Hydroxide (25%, <40oC)	A	X	X	B	A	X	B	A	A
Sodium Hydroxide (50%, <40oC)	A	X	X	C	A	X	B	B	B
Sodium Hypochionte (<20%)	A	X	B	A	A	A	X	B	A
Sodium Nitrate	A	-	X	A	A	A	A	B	A
Sodium Nitrite	A	-	-	A	A	A	A	B	A
Sodium Silicate	A	-	X	A	A	A	A	B	A
Sodium Sulfate	A	C	A	A	A	A	B	B	B
Sodium Sulfide (20%, 50oC)	A	-	X	A	A	B	B	B	-
Sulfuric Acid (50%, <60oC)	A	X	X	A	A	A	X	X	X
Sulfuric Acid (98%, <60oC)	A	X	X	B	A	A	X	X	X

MiKamachi Inc.

Flowtube Construction	Fluid Characteristics(1)						
	Clean	Mild Corro-sion	Severe Corro-sion	Mild Abra-sion	Severe Abra-sion	Mild Corrosion & Abrasion	Sanitary
ptfe / pfa Lining	A	A	A	B	X	B	A(2)
Sanitary (ptfe)	A	A	A	B	X	B	A(3)
Polyurethane	A	B	X	A	A	B	X
Neoprene	A	A	X	A	X	A	X
Ceramic	A	A	A	A	A	A	A(2)
Ceramic (Sanitary)	A	A	A	A	A	A	A(3)

Character	Description
"A"	Prefered Material - Virtually Unlimited Life. Should be considered as first choice. Where more than one material is rated "A", user should select based on own personal experience or knowledge
"B"	B = Satisfactory Material - Resonable Life under Most Conditions. Considered if an "A" rated option is not available.
"C"	Occasionally Used - Some Wear or Corrosion expected. Life expectancy varies as a function of temperature, concentration, and/or velocity. Use with Caution
"X"	Not Recommended. This material definitely can be troublesome will not survive, or is unacceptable.
"-"	Sufficient information not available.
(%)	Percent concentration of process liquid
(oC)	Maximum recommended process temperature in oC

Process Liquid	Flowtube Lining				Electrode Material				
	PTFE	Poly	Neo	Cer	Plat	Tant	316 ss	Hast C	Titan
Sulfuric Acid (10%)	A	X	C	A	A	A	C	B	A
Sodium Dioxide	A	B	B	A	A	A	A	A	A
Sodium Phosphate	A	B	B	A	A	A	B	B	-
Urea (50%)	A	X	X	A	-	A	B	-	A
Water River / City	A	A	A	A	A	A	A	A	A
White Liquor	A	-	B	A	A	X	B	B	B
Zinc Chloride (<20%, 50oC)	A	B	A	A	A	B	X	B	A
Zinc Sulfate	A	X	A	A	A	A	B	B	A