

pH Electrode Selection Guide

● Recommended ○ Can be measured × Prohibited or risk of damage
Representative sample names are shown in the table, therefore they may not apply to all cases. A reference electrode is necessary for a glass electrode.

		3-in-1 ELECTRODES (Touph)								ISFET ELECTRODES			3-in-1 ELECTRODES			COMBINATION ELECTRODES		GLASS ELECTRODES		REFERENCE ELECTRODES	
		PLASTIC	STANDARD Touph	LONG Touph	MICRO Touph	SLEEVE Touph	For TAP WATER	HF- PROOF		ALKALI- PROOF	NEEDLE ISFET	FLAT ISFET	SLEEVE	NON- AQUEOUS	NEEDLE	SLENDER TEST TUBE	FLAT	STANDARD	NON- AQUEOUS	STANDARD	DOUBLE
		9625-10D	9615-10D	9680-10D	9618-10D	9681-10D	9630-10D	9631-10D		9632-10D	0030-10D	0040-10D	6367-10D	6377-10D	6252-10D	6069-10C	6261-10C	1066A-10C	1076A-10C	2060A-10T	2565A-10T
Specification	Applicable temperature range (°C)	0-100	0-100	0-100	0-60	0-60	0-100	0-60		0-100	0-60	0-60	0-60	0-60	0-60	0-60	0-50	0-100	0-100	0-100	0-100
	Diameter (mm)	16	12	8	3	12	16	16		16	15	10	12	12	12	3	12	12	12	12	15
	Position of liquid junction (approx. mm)	15	13	21	6	26	15	20		15	11	0.1	10	23	13	8	—	—	—	—	—
	Length (mm)	150	198	283	185	203	150	155		150	190	190	150	150	150	291	150	150	150	150	150

pH-Sample Conditions

Aqueous Solution	Conductivity	Normal (over 100 mS/m)	●	●	●	●	●	●		●	●	●	●	●	●	●	●	●	●	●	●
		Low (approx. 10~100 mS/m)												●					●		●
		Very low (approx. 5~10 mS/m)												●					○		○
		High (approx. 5 S/m)	○	○	○		●	○		○								○	○	○	○
	Strong alkaline (pH 10-12)			○	○		○			●			○					○		○	○
	Strong acidity (pH 0-2) * Except HF sample			●																	
	Quick heat change (within 50°C)		●					●		●								○			
	High viscosity (approx. 5 Pa·S)												○	●				○	○		○
	Containing non-aqueous solvent			○	○	○	○				○	○	○	●					●		●
Solid/Semisolid	Suspension			○	○	○	●				○	○		●				○	○		○
	Inside										●				○						
Surface												●					○				

pH-Sample Conditions

Sample Containers	Microtube/plate (> 50 µL)		×	×	×	●	×	×	×		×	×	×	×	×	×	×	×	×	×	×
	NMR tube	φ5 mm ID > φ4 mm	×	×	×	×	×	×	×		×	×	×	×	×	●	×	×	×	×	×
		> φ4 mm				●										○		×	×	×	×
	Micro container (> 2 mL)				○	●												×	×	×	×
	Tube	ID:13 mm, L:100 ~ 150 mm			●													×	×	×	×
		10 mL ~ 1 L	●	●	○	○		○	●	●	○	○	○	○	○	○	○	○	○	○	○
	Large container (> 1 L)		○	○	●			○	○		○							○	○	○	○
	Petri dish											●					●	×	×	○	×
	Droplet		×	×	×	×	×	×	×		×	×	×	×	×	×	○	×	×	×	×

pH-Typical Samples

Water	Pure/ion-exchange water (approx. 0.1 mS/m)													●							
	Distilled water (approx. 0.5 mS/m)			○										●							
	Tap/drinking water (approx. 10 mS/m)		○	○			○	●						●				○	○	○	○
	Surface water			○			○	●						●				○	○	○	○
	Pharmaceutical water			○			○							○					○		○
Chemical reagent/solvent	Environmental water/acid rain		○	○			○	○						○					○		○
	Caustic/strong acid (Except HF sample)			●			○		●									○		○	○
	Hydrofluoric acid							●													
	Organic solvent		×					×	×	×	×	×	×	○					●		●
	KCl-reactive solution		×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○	×	●
	Surfactant			○			●							○				○	○		○
Pharmaceutical/biology sample	Water-based paint			○			●							○				○	○		○
	Dye/coloring agent						●							○				○	○		○
	Protein-containing sample			○		○	●						○						○		○
	Medicinal preparation					○	○							○					○		○
	Enzyme solution				○	●									○				○		○
	Tris buffer			●		○	○											○	○		○
Food	Suspension			○			●							●				○	○		○
	Agar medium																				
	Jam			○			●				●(inside)	●(surface)		○	○		○	○	○		○
	Meat/fish										●(inside)	●(surface)			●		○				
	Fruit/vegetable										●(inside)	●(surface)			○		○				
	Dough										●(inside)	●(surface)			○		○				
	Honey										○(inside)	○(surface)		●					○		○
	Cheese/butter										●(inside)	○(surface)			○		○				
Beverage/seasoning	Yogurt		○	○			○	○			●(inside)	●(surface)	○		○		○	○	○		○
	Beer		○	○			●	○					○	●				○	○		○
	Milk			○			●						○	○				○	○		○
	Carbonated drink/juice/sauce/soy sauce			○			●						○	○				○	○		○
	Mayonnaise/ketchup			○			●							○				○	○		○
Cosmetic/lotion	Beauty cream/mascara			○			●				○			○	○				○		○
	Gel/soap/shampoo			○			●							○					○		○
	Hairdye lotion			○			●							○					○		○
	Emulsified liquid			○			○							●					○		○