



pH Electrode Selection Guide

Can't see your application, or unsure? Contact us on support@camlab.co.uk to discuss your requirements

If you are using a 3-in-1 electrode please contact us to discuss your requirement as you may have a different connection method.

	EpoxyTough™	Camlab Glass	Rapid Glass	EpoxyTough™ Double Junction	Rapid-pH™ Epoxy	EpoxyTough™ Flat	Rapid Epoxy Flat	EpoxyTough™ Micro	EpoxyTough™ Long	EpoxyTough™ Spear Tip	Rapid Epoxy Liquid Junction	Rapid Glas		BlueLine 13PH	BlueScience spear tip N1048A	BlueScience Spear Tip	
	Camlab												SI Analytics				
Diameter, mm	12	12	12	12	12	15	12	6	9.5	9.9	12	12		12	25	12	
Length, mm	150	150	150	150	150	120	150	150	300	120	150	150		170	65	120	
Construction	Epoxy	Glass	Glass	Epoxy	Epoxy	Epoxy	Epoxy	Epoxy	Epoxy	Epoxy	Epoxy	Glass		Glass	Plastic	Glass	
Junction Type	Single	Double	Double	Double	Double	Double	Double	Single	Double	Double	Liquid	Liquid		Double	Double	Double	
BNC connection to meter 	1161693	-	1161705	1161694	1161701	1161698	1161703	1161697	1161696	1161699	1161702	1161704		-	-	-	
DIN connection to meter 	-	-	-	1161695	-	-	-	-	-	-	-	-		-	-	1160321	
S7 screw top on electrode 	-	1194004	1188197	-	-	-	1188196	-	-	-	-	-		1147050	1147056		
Standard aqueous samples	✓	✓	✓	✓	✓	✓		✓	✓	✓				✓	✓	✓	
Low volume or small container								✓									
Surface							✓	✓									
Viscous Materials							✓	✓									
Low Ionic Strength					✓						✓	✓		✓			
High Temperature (up to 100°C)					✓												
Agar							✓	✓								✓	
Tissue Samples							✓	✓									
Biological Samples, Proteins	X						✓				✓	✓					
Bread / Dough										✓						✓	
Dairy products	X			✓			✓			✓		✓				✓	
Fish products										✓						✓	
Meat / Cheese			X		X	✓	X			✓	X	X				✓	✓
Jams						✓	X			✓							
Wine / Beer		✓		✓				✓	✓		✓	✓		✓			
Fruit Juices	X										✓	✓		✓			
Cosmetics																	
Paint	X	X	X			✓	✓					X					
Soil	X	X	X		X	✓	X				X	X		✓			
TRIS Buffers	X			✓		✓			✓								
Heavy metals/ sulfides/ cyanide	X	✓		✓					✓		✓	✓					
Water / Oil mixtures														✓			
Liquids with dissolved gases																	
Aqueous Organic Solvent Mix		✓	✓									✓					

*cable is required, see page 2

Recommended
 Not Recommended
 X Do Not use



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An introduction to pH

pH is a measurement of the concentration of hydrogen ions (H^+) in a substance. The scale it is measured on runs from 0 to 14.

A reading of 7 is neutral, below this is acidic and above this is alkaline or basic.

Electrode Cables

If you are using an electrode which has an S7 screw top you may also need a cable to connect it to your meter. The part numbers for these are;

1147028 S7 to BNC

1147027 S7 to DIN

Adapter Cables

An adapter cable will allow you to use an electrode with a BNC connection on a meter that requires a DIN connection;

1161706 BNC to DIN adapter

Electrode Care and Maintenance

Between uses your electrode should be stored in a 3.0M KCl (potassium chloride) solution. An electrode storage bottle will help ensure that the electrode tip is not damaged and that the solution doesn't evaporate over time.

1161708 Electrode storage bottle

1111609 pH electrode storage solution 500ml

Calibration

Electrodes should be calibrated using pH buffer to ensure they are reading accurately. A 3 point calibration at pH 4, 7 and 10 is most common, but check the manual of your pH meter to see what it requires. See our range of pH buffers [here](#).

What do the different electrode types mean?

There are a variety of different types of electrode available to fit different applications. Electrodes may have any combination of these features to make them suitable for specific samples.

Double Junction – these electrodes have an additional salt bridge to prevent reactions between the electrode fill solution and your sample which would otherwise cause damage to the electrode junction. They are required to test samples that contain proteins, heavy metals or sulphides.

Liquid Junction – A liquid junction electrode creates a junction with a thin film of filling solution at the tip of the probe. They usually have a pump function to allow you to create a fresh junction for every use. They do need refilling regularly but offer the best performance increasing lifetime, accuracy and speed of response.

Flat – the end of these electrodes is perfectly flat so a reading can be taken from the surface of a solid sample. These may be used for measuring fabrics, biological tissues or pastes.

Spear Tip – the pointed tip of these electrodes mean you can pierce solid samples to take a reading. Typical applications include meat, cheese or soil.

EpoxyTough™ – these electrodes are filled with gel rather than traditional liquid filled models, so you do not need to refill them.

Micro – this small, slim electrode means that you can test when you have only a small amount of sample, or your sample is in a small container.

Questions?

Can't see your application here, or unsure of what you need?

If you need any further information or advice on your pH reading application contact our technical support team; support@camlab.co.uk