

pH/ORP

Cal-Memo sensor

The sensor memorizes Model, serial number, calibration data

		Application	Range		Strong	Float	Silver ion
			pH, ORP	Temp.			
pH combined electrode	GST-5841C	For general use	pHO~14	0~100°C	○	○	○
	GST-5821C	For general use	pHO~14	0~100°C	—	○	○
	GST-5841S	For organic solvent	pHO~14	0~100°C	○	○	—
	GST-5842S	For precise measurement	pHO~14	0~60°C	○	○	—
	GST-5823S	For precise&trace measurement	pHO~11	0~60°C	—	○	—
	GST-5824C	Spear type	pHO~12	0~60°C	—	○	—
	GST-5845C	For trace sample	pHO~13	0~100°C	○	—	—
	GST-5846C	For ultra trace sample	pHO~13	0~60°C	○	—	—
	GST-5847C	For test tube	pHO~13	0~100°C	○	—	—
	GST-5848C	For fine test tube	pHO~13	0~60°C	○	—	—
	GST-5820C	Flow-through type	pHO~12	0~60°C	—	○	—
	GST-5851C	For strong alkaline sample	pHO~14	0~100°C	—	○	○
ELP-040	For hydrofluoric acid bath	pH2~12	0~50°C	—	○	—	
5082L	Glass electrode chip						
ORP combined electrode	PST-5821C	For general use	Range of indication	0~100°C	—	○	○
ORP combined electrode Cal-Memo incompatible	PS-5011C	For general use	Range of indication	—	—	○	○

pH1.68 Standard Solution	500mL	143F194
pH4.01 Standard Solution	500mL	143F191
pH6.86 Standard Solution	500mL	143F192
pH9.18 Standard Solution	500mL	143F193
pH10.02 Standard Solution	500mL	143F195
Reference electrode internal solution RE-4 50mL×3		OBG00011

ORP check solution (pH standard solution 4.01 500mL+Quinhydrone powder)	143F196
ORP electrode abrasive 10mL	AO-001

- Strong Glass electrode. The strength of its tip is improved. Hard to break.
- Float Float is built-in whose exchange span of internal solution can be checked in a glimpse
- Silver Ion Trap Measurement performance of solution with shock absorbing characteristics such as tap water and alkaline solution is improved.

Conductivity

Cell		Application	Range		Cell Constant
			Conductivity	Temp.	
Immersion/drop-in type Conductivity Cell	CT-58101B	For general use	100μS/m~10S/m {1μS/cm~100mS/cm}	0~100°C	100m ⁻¹
	CT-58101C	For Low Conductivity use	5μS/m~1S/m {0.05μS/cm~10mS/cm}	0~100°C	10m ⁻¹
	CT-58101A	For High Conductivity use	1mS/m~100S/m {10μS/cm~1S/cm}	0~100°C	1000m ⁻¹
Flow-through type Conductivity Cell	CT-88101B	For General	100μS/m~10S/m {1μS/cm~100mS/cm}	0~100°C	100m ⁻¹
	CT-88101C	For Low Conductivity	5μS/m~1S/m {0.05μS/cm~10mS/cm}	0~100°C	10m ⁻¹
	CT-88102A	For High Conductivity	10mS/m~100S/m {100μS/cm~1S/cm}	0~100°C	2000m ⁻¹
	CT-27111D	For Pure Water	5μS/m~20mS/m {0.05μS/cm~200μS/cm}	0~80°C	1m ⁻¹

Conductivity Cell Check C Solution 100mL (4 bottles)	140.9mS/m at 25°C	OBI00001
Conductivity Cell Check B Solution 250mL (2 bottles)	1286mS/m at 25°C	OBI00002
Flow-throu cell (PP) Connection Diameter: Outer Diameter 8mm×Inner Diameter 4mm		CEF-22A
Flow cell (SUS) Connection Diameter: Outer Diameter 8mm×Inner Diameter 6mm		CEF-23A

Dissolved Oxygen

Electrode	Application	Range	Note	Measurement method
DO electrode	OE-273AA	Standard Membrane: 0~20mg/L High Range Membrane: 0~50mg/L (High Range Membrane Set sold separately)	For no-flow measurement	Membrane Polarographic Method
	OE-573BA			
	OE-473AA	Bottle w/stopper-use	With stirring function	
	OE-473BA	Lab-use	For no-flow measurement	

Membrane set OE-273AA (3 sets)	OCC00001
Membrane Set OE-273AA High Range DO (3 sets)	OCC00002
Membrane Set OE-573BA (3 sets)	OCC00023
Membrane Set OE-573BA High Range DO (3 sets)	OCC00024
Membrane Set OE-473AA (3 sets)	OCC00003
Membrane Cartridge OE-473AA (5 sets)	OCT-2502
Membrane Set OE-473BA (3 sets)	OCC00022
Electrolyte R-12 50mL (3 sets)	143H008
Sodium Sulfite 50g	143A030

Note(1) DO electrode cannot be used for the below membrane type galvanic cell method.

OE-270AA/570BA, 470AA/470BA

Note(2) For BOD measurement, auxiliary equipment such as bottle w/stopper and incubator is necessary.

Recommended bottle w/stopper
JIS standard Medium Size TS19/22 (Large-diameter 18.8mm, Reduced-diameter 16.6mm, Length 22mm)

Ion

Electrode	Ion replacement chip	Measurement range(Optimal pH range)	Interference of coexisting ion*/ Note
Fluoride ion combined electrode F-2021	F-200 (Solid Membrane)	0.019~19,000mg/L F ⁻ (pH5~6)	OH ⁻ =10 ¹ HPO ₄ ²⁻ , HCO ₃ ⁻ =10 ³ (pH 7~8) Cl ⁻ , Br ⁻ , I ⁻ , NO ₃ ⁻ , SO ₄ ²⁻ , S ₂ O ₃ ²⁻ =10 ⁵
Chloride ion combined electrode CL-2021	CL-200B (Solid Membrane)	1~35,000mg/L Cl ⁻ (pH5~6)	S ²⁻ =Must be absent CN ⁻ , I ⁻ =10 ⁻⁵ Br ⁻ , S ₂ O ₃ ²⁻ =10 ⁻² NO ₃ ⁻ , SO ₄ ²⁻ , CO ₃ ²⁻ , PO ₄ ³⁻ , F ⁻ =10 ³
Cyanide ion combined electrode CN-2021	CN-200B (Solid Membrane)	0.003~26mg/L CN ⁻ (pH12~13)	S ²⁻ =Must be absent I ⁻ =10 ⁻¹ S ₂ O ₃ ²⁻ =10 ¹ Br ⁻ =10 ³ NO ₃ ⁻ , SO ₄ ²⁻ , PO ₄ ³⁻ =10 ⁴ CO ₃ ²⁻ , Cl ⁻ , F ⁻ =10 ⁵
Sodium ion combined electrode NA-2011	NA-100B (Glass Membrane)	2.3~23,000mg/L Na ⁺ (pH10~11)	Mg ²⁺ , Ca ²⁺ , Zn ²⁺ , NH ₄ ⁺ , K ⁺ , Li ⁺ =10 ³
Sodium ion combined electrode K-2031	K-300B (Liquid Membrane)	0.39~3,900mg/L K ⁺ (pH5~6)	H ⁺ =10 ² NH ₄ ⁺ =3×10 ² Na ⁺ =2×10 ³ Li ⁺ =10 ⁴
Calcium ion combined electrode CA-2031	CA-300 (Liquid Membrane)	0.4~40,000mg/L Ca ²⁺ (pH5~6)	Pb ²⁺ , Zn ²⁺ =10 ¹ Mn ²⁺ =10 ² Cu ²⁺ , Mg ²⁺ , Cd ²⁺ , Ba ²⁺ , Fe ²⁺ =10 ³ Ni ²⁺ =10 ⁴
Nitrate ion combined electrode N-2031	N-300 (Liquid Membrane)	0.62~62,000mg/L NO ₃ ⁻ (pH5~6)	I ⁻ =10 ⁻³ Br ⁻ , NO ₂ ⁻ =10 ⁰ Cl ⁻ =10 ¹ CH ₃ COO ⁻ , SO ₄ ²⁻ , CO ₃ ²⁻ , F ⁻ =10 ²
Ammonium electrode(Membrane electrode) AE-2041	—	0.09~1,800mg/L NH ₄ ⁺ (pH12 or more)	Volatile amines
Carbon Dioxide electrode(Membrane electrode) CE-2041	—	Dissolved Gas 1.49~1,490mg/L	Dissolved gas:Volatile weak acid Atmosphere:Acidic gas Calibration cell(CGC-202L) and Calibration adapter (6791140K) is necessary.
Bromine ion combined electrode BR-2021	BR-200 (Solid Membrane)	0.8~80,000mg/L Br ⁻ (pH5~6)	S ²⁻ =Must be absent CN ⁻ , I ⁻ =10 ⁻⁴ S ₂ O ₃ ²⁻ , SCN ⁻ =10 ⁰ Cl ⁻ =10 ² NO ₃ ⁻ , SO ₄ ²⁻ , CO ₃ ²⁻ , F ⁻ =10 ⁴
Iodide ion combined electrode I-2021	I-200 (Solid Membrane)	0.01~127,000mg/L I ⁻ (pH5~6)	S ²⁻ , Reducing substance = Must be absent CN ⁻ =10 ⁰ S ₂ O ₃ ²⁻ =10 ¹ SCN ⁻ =10 ³ Br ⁻ =10 ⁴ NO ₃ ⁻ , CO ₃ ²⁻ , PO ₄ ³⁻ , Cl ⁻ , F ⁻ =10 ⁵
Cadmium ion combined electrode CD-2021	CD-200 (Solid Membrane)	0.01~1,120mg/L Cd ²⁺ (pH5~6)	Hg ²⁺ , Ag ⁺ , Cu ²⁺ =Must be absent Pb ²⁺ , Fe ³⁺ =10 ⁰ Cr ³⁺ =10 ² Na ⁺ , K ⁺ , Mg ²⁺ , Ca ²⁺ , Zn ²⁺ , Al ³⁺ =10 ⁵
Copper ion combined electrode CU-2021	CU-200 (Solid Membrane)	0.06~630mg/L Cu ²⁺ (pH5~6)	Ag ⁺ , Hg ²⁺ =Must be absent Fe ³⁺ =10 ⁻¹ Al ³⁺ =10 ¹ Cr ³⁺ =10 ² Ni ²⁺ =10 ³ Na ⁺ , Mg ²⁺ , Ca ²⁺ =10 ⁴
Silver ion combined electrode AG-2021	AG-200 (Solid Membrane)	0.1~108,000mg/L Ag ⁺ (pH5~6)	Hg ²⁺ =Must be absent Mg ²⁺ =10 ³ Ca ²⁺ , Cu ²⁺ , Pb ²⁺ , Cd ²⁺ , Zn ²⁺ =10 ⁴ Na ⁺ , K ⁺ =10 ⁶
Sulfide ion combined electrode S-2021	S-200 (Solid Membrane)	0.3~32,000mg/L S ²⁻ (pH13 or more)	—

Ion sensor replacement liquid junction (10)	OLF00001
F Standard Solution F-1000 500mL	143F391
F Standard Buffer Solution F-10+TISAB-11 500mL	143F393
F Standard Buffer Solution F-100+TISAB-11 500mL	143F392
Cl Standard Solution CL-1000 500mL	143A281
CN Standard Solution 500mL	Toxic CN-100
Na Standard Solution NA-1000 500mL	143E031
K Standard Solution K-1000 500mL	143B482
Ca Standard Solution CA-1000 500mL	143B481
NO3 Standard Solution NO3-1000 500mL	143C486
NO3-N Standard Solution NO3-N 500mL	143C487
NH4 Standard Solution NH4-1000 500mL	143A041
NH4-N Standard Solution NH4-N 500mL	143A042
Carbon Dioxide Electrode Calibration Powder for CGS-111 1L (10 pillows)	143D044
Br Standard Solution BR-1000 500mL	143C483
I Standard Solution I-1000 500mL	143H091
Cd Standard Solution CD-100 500mL	143B500
Cu Standard Solution CU-100 500mL	143D043
Ionic Strength Adjuster TISAB-01 500mL	143A279
Ionic Strength Adjuster TISAB-11 500mL	143A280
Ionic Strength Adjuster ISA-CL 500mL For Cl, Br, I, Ag	143A334
Ionic Strength Adjuster ISA-CN 500mL For CN	143A335
Ionic Strength Adjuster ISA-NA 500mL For Na	143A338
Ionic Strength Adjuster ISA-K 500mL For K	143A337
Ionic Strength Adjuster ISA-CA 500mL For Ca	143A333
Ionic Strength Adjuster ISA-NO 500mL For NO ₃	143A340
Ionic Strength Adjuster ISA-NH 500mL For NH ₄	143A339
Ionic Strength Adjuster ISA-CO 500mL For CO ₂	143D045
Ionic Strength Adjuster ISA-CU 500mL For Cu, Cd	143A336
Ionic Strength Adjuster Powder for ISA-S 100mL (10 pillows) S	143A332
Reference Electrode Internal Solution RE-1 100mL	143F230
Reference Electrode Outer Chamber Solution RE-2 100mL	143F238
Reference Electrode Outer Chamber Solution RE-3 100mL	143F239
Ammonia Electrode Internal Solution RE-NH4 50mL (3 bottles)	OBG00005
Carbon Dioxide Electrode Internal Solution RE-11	143D042
Ammonia Electrode Replacement Membrane (10 membranes)	AE-FILM
Carbon Dioxide Electrode Membrane Cartridge (4 cartridges)	CTC-211
Carbon Dioxide Electrode Calibration Cell	CGC-202L
Calibration Adapter	67911490K

Toxic: Cautions are needed when handling.

- ※1 Interference of coexisting ion (Selectivity coefficient for 10⁻¹mol/L ion concentration 10⁻²mol/L for Cadmium ion and Silver ion, 10⁻³mol/L for Cyanide ion, and Copper ion)
If an ion coexists in the solution, it can cause data errors when measuring the targeted ion. A selectivity coefficient of 10^x means that if the solution contains a coexistent ion that is 10^x times greater than the value of the targeted ion that is measured, an error occurs in which the value of the targeted ion equals the coexistent ion value.
If the concentration level of the coexistent ion is high enough to affect the measured values, we recommend conducting pretreatment in order to prevent interference.
- ※2 143A279(TISAB-01): For general sample 143A280(TISAB-11):For sample containing metal ion(iron, aluminum etc.)

Note(1) The ion electrode does not have temperature measurement function. Measurable solution temperature range is 0-50°C .

Note(2) In addition to the electrode, standard solution, ion strength adjuster, and reference electrode external solution are necessary for ion measurement.

Note(3) Make sure to contact us before you conduct ion measurements, because when there are coexisting samples, it can be difficult to conduct ion measurements.

Note(4) We do not sell silver and sulfide ion standard solutions. Customers are suggested to prepare following the steps listed in the instruction manual.

Full lineup of high-reliability sensors for a variety of uses

- Waterproof sensors perfect for field measurement.
- The "Cal-memo (Calibration Memo)" sensor has built-in memory and is designed for validation support.
 - Can store calibration data and cell constants
 - Realizes advanced measurement control
 - Free of setting errors for cell constants and ion species
- Our original built-in float for monitoring the internal solution concentration allows the user to instantly recognize when the solution needs to be replaced. (pH/ORP)



[pH/ORP]

Electrode	Use	Measuring range	Lead length	Remarks
pH combination electrode "Cal-memo (Calibration Memo)" GST-2729C <small>Waterproof type</small>	General environment/ immersion	pH0~14 0~100°C	1m (Standard)	Electrode with HM-31P/WM-32EP/ IM-32P/DO-32P fitted as standard (Lead length: 1 m) Approval of type by Measurement Law
			3m	
			5m	
			11m	
pH combination electrode GST-2739C <small>Waterproof type</small>	General environment/ immersion	pH0~14 0~100°C	1m (Standard)	Electrode with HM-30P fitted as standard (Lead length: 1 m) Approval of type by Measurement Law
			3m	
			5m	
			11m	
pH combination electrode "Cal-memo (Calibration Memo)" ELP-031	Organic solvent- containing solution	pH0~14 0~100°C	1m	Approval of type by Measurement Law
pH combination electrode "Cal-memo (Calibration Memo)" ELP-040	Fluorinated acid solution-resistance*	pH2~12 0~50°C	1m	Replaceable type glass electrode tip glass electrode tip (5082L)
ORP combination electrode "Cal-memo (Calibration Memo)" PST-2729C <small>Waterproof type</small>	General environment/ immersion	0~± 2000mV 0~100°C	1m (Standard)	
			5m	
			11m	
ORP combination electrode PST-2739C <small>Waterproof type</small>	General environment/ immersion	0~± 2000mV 0~100°C	1m (Standard)	Electrode with RM-30P fitted as standard (Lead length: 1 m)
			5m	
			11m	

*1 The glass electrode is affected by fluorinated acid solution. However, because this product is a replaceable type glass electrode tip, a reduction in operating costs can be expected. In regards to measuring the 1% fluorinated acid solution (at 25°C, for 1 min.), approximately 1000 measurements can be performed.

Product Name	Code number
pH4.01 standard solution, 500 mL	143F191
pH6.86 standard solution, 500 mL	143F192
pH9.18 standard solution, 500 mL	143F193
Reference electrode internal solution RE-4, 50 mL (3 bottles)	OBG00011
ORP check solution (pH4.01 standard solution, 500 mL + quinhydrone powder, 5 packs)	143F196
Abrasive for ORP electrode, 10mL	AO-001



[Electrical Conductivity]

Cell	Use	Meas. Range (Cell Constant)	Lead Length	Remarks
Electrical conductivity cell "Cal-memo (Calibration Memo)" CT-27112B <small>Waterproof type</small>	General environment/ immersion	0.1mS/m~ 10S/m(250m ⁻¹) 0~80°C	1m (Standard)	Cell with CM-31P/WM-32EP fitted as standard (Lead length: 1 m)
			5m	
			11m	
Electrical conductivity cell "Cal-memo (Calibration Memo)" CT-27111D	pure water measurement/ flow-through type	5μS/m~ 20mS/m(1m ⁻¹) 0~80°C	1m	Cell with CM-31P-W fitted as standard <Flow cell sold separately.>*2 Note: Cannot be connected to WM-32EP.
Electrical conductivity cell "Cal-memo (Calibration Memo)" CT-57101B	General environment/ tabletop use	100μS/m~ 10S/m(100m ⁻¹) 0~100°C	1m	
Electrical conductivity cell "Cal-memo (Calibration Memo)" CT-57101A	High electrical conductivity/tabletop use	1mS/m~ 100S/m(1000m ⁻¹) 0~100°C	1m	
Electrical conductivity cell "Cal-memo (Calibration Memo)" CT-57101C	Low electrical conductivity/tabletop use	5μS/m~ 1S/m(10m ⁻¹) 0~100°C	1m	Note: When you perform measurements in pure water, you must use CT-27111D.

*2 If you order the full CM-31P-W set, a flow cell is also fitted as standard.

Product Name	Code number
Conductivity cell check solution C (140.9mS/m at 25.0°C), 100 mL (4 bottles)	OB100001
Conductivity cell check solution B (1286mS/m at 25.0°C), 250 mL (2 bottles)	OB100002
Flow cell (made of PP)	CEF-22A
Flow cell (made of SUS)	CEF-23A



[DO]

Electrode	Use	Measuring range	Lead	Remarks
DO electrode "Cal-memo (Calibration Memo)" OE-270AA <small>Waterproof type</small>	Immersion/ Throw-in use	If a standard membrane is used: 0~20mg/L If a high concentration membrane is used: 0~50mg/L (High concentration membrane set is sold separately.)	3m (Standard)	Electrode with DO-31P/DM- 32P fitted as standard (Lead length: 3 m)
			5m	
			11m	
DO electrode "Cal-memo (Calibration Memo)" OE-570BA <small>Waterproof type</small>	Immersion/ Throw-in use	0~50mg/L 0~50°C (High concentration membrane set is sold separately.)	3m (Standard)	Can be used to conduct zero flow rate measurements
			5m	
			11m	
DO electrode "Cal-memo (Calibration Memo)" OE-470AA	Incubator bottle	0~20mg/L	1m	Equipped with a stirring function. (Recommended for conducting BOD measurements)
DO electrode "Cal-memo (Calibration Memo)" OE-470BA	Incubator bottle		1m	Can be used to conduct zero flow rate measurements



Product Name	Code	Remarks
DO module	OEC-002	Exclusive to OE-270AA One-touch fitting type featuring an integral construction made up of an electrode, membrane, and electrolysis solution.
Membrane set for OE-270AA (3 sets)	OCC00001	For OE-270AA (standard measurement)
Membrane set for OE-270AA (high concentration DO) (3 sets)	OCC00002	For OE-270AA (high concentration measurement)
Membrane set for OE-570BA (3 sets)	OCC00023	For OE-570BA (standard measurement)
Membrane set for OE-570BA (high concentration DO) (3 sets)	OCC00024	For OE-570BA (high concentration measurement)
Membrane set for OE-470AA (3 sets)	OCC00003	For OE-470AA (measurement)
Membrane cartridge for OE-470AA (5 pieces)	OCT-2502	For OE-470AA (measurement)
Membrane set for OE-470BA (3 sets)	OCC00022	For OE-470BA (measurement)
Underwater stirrer	OSM00002	For OE-270AA/570BA
Electrolysis solution R-9, 50 mL (3 bottles)	OBG00007	For OE-270AA/570BA/470AA/470BA
Sodium sulfite 50 g	143A030	Used for preparing zero solution

[Ion]

The ion sensing portion is a replaceable tip (except membrane electrode).
Lead length is 1 m.



- Notes: (1) The ion electrode is not provided for waterproof function and temperature measurement function. Measurable solution temperature range is 0 - 50 °C.
(2) The batch measurement method is primarily used to conduct ion measurements. This method is conducted after sampling, which uses beakers and other apparatuses.
(3) In addition to the electrode, the standard solution, ionic strength adjuster, and reference electrode external solution are also required for conducting ion measurements.
(4) Make sure to contact us before you conduct ion measurements. We ask this because in certain cases it can be difficult to conduct ion measurements, such as when there are coexisting ions in the sample.

Electrode name	Model name of the ion replacement tip	Measuring range (optimal pH range)	Effect of coexistent ion*/Remarks
Fluoride ion combination electrode F-2021	F-200 (Solid membrane)	0.019~19,000mg/L F ⁻ (pH5~6)	OH ⁻ =10 ¹ HPO ₄ ²⁻ , HCO ₃ ⁻ =10 ³ (pH7~8) Cl ⁻ , Br ⁻ , I ⁻ , NO ₃ ⁻ , SO ₄ ²⁻ , S ₂ O ₃ ²⁻ =10 ⁵
Chloride ion combination electrode CL-2021	CL-200B (Solid membrane)	1~35,000mg/L Cl ⁻ (pH5~6)	S ²⁻ =Cannot coexist CN ⁻ , I ⁻ =10 ⁻⁵ Br ⁻ , S ₂ O ₃ ²⁻ =10 ⁻² NO ₃ ⁻ , SO ₄ ²⁻ , CO ₃ ²⁻ , PO ₄ ³⁻ , F ⁻ =10 ³
Bromide ion combination electrode BR-2021	BR-200 (Solid membrane)	0.8~80,000mg/L Br ⁻ (pH5~6)	S ²⁻ =Cannot coexist CN ⁻ , I ⁻ =10 ⁻⁴ S ₂ O ₃ ²⁻ , SCN ⁻ =10 ⁰ Cl ⁻ =10 ² NO ₃ ⁻ , SO ₄ ²⁻ , CO ₃ ²⁻ , F ⁻ =10 ⁴
Iodide ion combination electrode I-2021	I-200 (Solid membrane)	0.01~127,000mg/L I ⁻ (pH5~6)	S ²⁻ , reducing substances=Cannot coexist CN=10 ⁰ S ₂ O ₃ ²⁻ =10 ¹ SCN ⁻ =10 ³ Br ⁻ =10 ⁴ NO ₃ ⁻ , CO ₃ ²⁻ , PO ₄ ³⁻ , Cl ⁻ , F ⁻ =10 ⁵
Cyanide ion combination electrode CN-2021	CN-200B (Solid membrane)	0.003~26mg/L CN ⁻ (pH12~13)	S ²⁻ =Cannot coexist I ⁻ =10 ⁻¹ S ₂ O ₃ ²⁻ =10 ¹ Br ⁻ =10 ³ NO ₃ ⁻ , SO ₄ ²⁻ , PO ₄ ³⁻ =10 ⁴ CO ₃ ²⁻ , Cl ⁻ , F ⁻ =10 ⁵
Nitrate ion combination electrode N-2031	N-300 (Liquid membrane)	0.62~62,000mg/L NO ₃ ⁻ (pH5~6)	I ⁻ =10 ⁻³ Br ⁻ , NO ₂ ⁻ =10 ⁰ Cl ⁻ =10 ¹ CH ₃ COO ⁻ , SO ₄ ²⁻ , CO ₃ ²⁻ , F ⁻ =10 ²
Sulfide ion combination electrode S-2021	S-200 (Solid membrane)	0.3~32,000mg/L S ²⁻ (pH13 or more)	—
Sodium ion combination electrode NA-2011	NA-100B (Glass membrane)	2.3~23,000mg/L Na ⁺ (pH10~11)	Mg ²⁺ , Ca ²⁺ , Zn ²⁺ , NH ₄ ⁺ , K ⁺ , Li ⁺ =10 ³
Potassium ion combination electrode K-2031	K-300B (Liquid membrane)	0.39~3,900mg/L K ⁺ (pH5~6)	H ⁺ =10 ² NH ₄ ⁺ =3×10 ² Na ⁺ =2×10 ³ Li ⁺ =10 ⁴
Calcium ion combination electrode CA-2031	CA-300 (Liquid membrane)	0.4~40,000mg/L Ca ²⁺ (pH5~6)	Pb ²⁺ , Zn ²⁺ =10 ¹ Mn ²⁺ =10 ² Cu ²⁺ , Mg ²⁺ , Cd ²⁺ , Ba ²⁺ , Fe ²⁺ =10 ³ Ni ²⁺ =10 ⁴
Cadmium ion combination electrode CD-2021	CD-200 (Solid membrane)	0.01~1,120mg/L Cd ²⁺ (pH5~6)	Hg ²⁺ , Ag ⁺ , Cu ²⁺ =Cannot coexist Pb ²⁺ , Fe ³⁺ =10 ⁰ Cr ³⁺ =10 ² Na ⁺ , K ⁺ , Mg ²⁺ , Ca ²⁺ , Zn ²⁺ , Al ³⁺ =10 ⁵
Copper ion combination electrode CU-2021	CU-200 (Solid membrane)	0.06~630mg/L Cu ²⁺ (pH5~6)	Ag ⁺ , Hg ²⁺ =Cannot coexist Fe ³⁺ =10 ⁻¹ Al ³⁺ =10 ¹ Cr ³⁺ =10 ² Ni ²⁺ =10 ³ Na ⁺ , Mg ²⁺ , Ca ²⁺ =10 ⁴
Silver ion combination electrode AG-2021	AG-200 (Solid membrane)	0.1~108,000mg/L Ag ⁺ (pH5~6)	Hg ²⁺ =Cannot coexist Mg ²⁺ =10 ³ Ca ²⁺ , Cu ²⁺ , Pb ²⁺ , Cd ²⁺ , Zn ²⁺ =10 ⁴ Na ⁺ , K ⁺ =10 ⁶
Ammonia combination electrode AE-2041	—	0.09~1,800mg/L NH ₄ ⁺ (pH12 or more)	Volatile amines
Carbon dioxide combination electrode CE-2041	—	Dissolved gas 1.49~1,490mg/L	Dissolved gas : Volatile weak acid Airborne gas : Acid gas Note : A cell for calibration (CGC-202L) and an adapter for calibration (6791140K) sold separately.

*Effect of coexistent ion (selectivity coefficient for 0.1 mol/L ion concentration)

If an ion coexists in the solution, it can cause data errors when measuring the targeted ion. The effects of the coexistent ion are shown here.

A selectivity coefficient of 10x means that if the solution contains a coexistent ion that is 10 times greater than the value of the targeted ion that is measured, an error occurs in which the value of the targeted ion equals the coexistent ion value.

If the concentration level of the coexistent ion is high enough to affect the measured values, we recommend conducting pretreatment in order to prevent interference.

Product Name	Code	Remarks
Exchange liquid junction for ion sensor (10 pieces)	OLF00001	For all ion combination electrodes (except AE/CE-2041)
Exchange membrane for ammonia electrode (10 sheets)	AE-FILM	For AE-2041
Membrane cartridge for carbon dioxide gas electrode (4 pieces)	CTC-211	For CE-2041
Calibration cell for carbon dioxide electrode	CGC-202L	For CE-2041
Calibration adapter	6791140K	For CE-2041
Reference electrode internal solution RE-1, 100 mL	143F230	For the internal solutions of all ion combination electrodes (except AE/CE-2041). Reference external solution for CA-2031 and I/S//F-2021.
Reference electrode external solution RE-2, 100 mL	143F238	Reference external solution for NA-2011 and CL/BR/CN/CD/CU/AG/F-2021
Reference electrode external solution RE-3, 100 mL	143F239	Reference external solution for K/N-2031
Ammonia electrode internal solution, 50 mL (3 bottles)	OBG00005	For AE-2041
Carbon dioxide electrode internal solution RE-11, 500 mL	143D042	For CE-2041
Na standard solution NA-1000, 500 mL	143E031	For NA-2011. Na: 1000 mg/L
Cl standard solution CL-1000, 500 mL	143A281	For CL-2021. Cl: 1000 mg/L
Br standard solution BR-1000, 500 mL	143C483	For BR-2021. Br: 1000 mg/L
I standard solution I-1000, 500 mL	143H091	For I-2021. I: 1000 mg/L
CN standard solution, 500 mL *Toxi	CN-100	For CN-2021. CN: 100 mg/L Hazardous Material
Cd standard solution CD-100, 500 mL	143B500	For CD-2021. Cd: 100 mg/L
Cu standard solution CU-100, 500mL	143D043	For CU-2021
K standard solution K-1000, 500 mL	143B482	For K-2031. K: 1000 mg/L
Ca standard solution CA-1000, 500 mL	143B481	For CA-2031. Ca: 1000 mg/L
NH ₄ standard solution NH4-1000, 500 mL	143A041	For AE-2041. NH ₄ : 1000 mg/L
NH ₄ -N standard solution NH4-N, 500 mL	143A042	For AE-2041. NH ₄ -N: 1000 mg/L
NO ₃ standard solution NO3-1000, 500 mL	143C486	For N-2031. NO ₃ : 1000 mg/L
NO ₃ -N standard solution NO3-N, 500 mL	143C487	For N-2031. NO ₃ -N: 1000 mg/L
F standard solution F-1000, 500 mL	143F391	For F-2021. F: 1000 mg/L
F buffer standard solution F-10, 500 mL	143F393	For F-2021. F: 10 mg/L (for special use)
F buffer standard solution F-100 500 mL	143F392	For F-2021. F: 10 mg/L (for special use)
Carbon dioxide electrode calibration powder (10 packs)	143D044	For CE-2041.
Ionic strength adjuster ISA-NA, 500 mL	143A338	For NA-2021.
Ionic strength adjuster ISA-CL 500 mL	143A334	For AG/CL/BR/I-2021.
Ionic strength adjuster ISA-CN 500 mL	143A335	For CN-2021. Hazardous Material
Ionic strength adjuster ISA-CU 500 mL	143A336	For CU/CD-2021. Hazardous Material
Ionic strength adjuster ISA-K 500 mL	143A337	For K-2031.
Ionic strength adjuster ISA-CA 500 mL	143A333	For CA-2031.
Ionic strength adjuster TISAB-01 500 mL	143A279	For F-2021. For general purpose use.
Ionic strength adjuster TISAB-11 500 mL	143A280	For F-2021. For solutions that contain heavy metals.
Ionic strength adjuster ISA-NO 500 mL	143A340	For N-2031.
Ionic strength adjuster ISA-NH 500 mL	143A339	For AE-2041. Hazardous Material
Ionic strength adjuster ISA-CO 500 mL	143D045	For CE-2041.
Ionic strength adjuster ISA-S (powder) (10 packs)	143A332	For S-2021.

Note : We do not sell silver ion standard and sulfide ion standard solutions. If you need these solutions, you must prepare yourself, following the steps listed in the instruction manual.

*Toxic : Exercise caution when handling.