INSTRUCTION MANUAL

No.203S

Kitagawa COPPER ION DETECTOR TUBES

★ READ CAREFULLY THIS INSTRUCTION MANUAL AND THE INSTRUCTIONS OF THE ASPIRATING PUMP PRIOR TO USING THIS PRODUCT.
★ DON'T DISCARD THIS INSTRUCTION MANUAL UNTIL ALL THE TUBES IN THIS BOX ARE USED UP.

1. PERFORMANCE:

Measuring Range and Sampling Time:	1 - 100 mg/1 (1 to 1.5 minutes)
Colour Change:	White → Orangee
Detectable Limit:	0.5 mg/1
Operating temperature:	0 - 40 ℃ (32-104°F) (No corrections are necessary.)

·CAUTION
1. DETECTOR TUBE CONTAINS REAGENTS.
2. DON'T TOUCH THESE REAGENTS DIRECTLY ONCE TUBES ARE BROKEN.
3. KEEP THE TUBES OUT OF THE REACH OF CHILDREN.

NOTICE

1. READ THE READING VALUE AFTER THE TEST. IF THE TUBE IS LEFT WET, THE PEELING OF THE SCALE PRINTED MAY BE OCCURED.

2. 10 PCS. OF A FILTER PAPER IS ATTACHED AS STANDARD ACCESSORIES. IN CASE THAT THE SAMPLE SOLUTION CONTAINS FINE MATERIAL AND THE CUT END OF THE TUBE IN THE SOLUTION MIGHT BE CLOSED WITH THE FINE MATERIAL, WRAP THE TUBE END WITH A FILTER PAPER BEFORE PUTTING INTO THE SOLUTION.

2. SAMPLING AND MEASUREMENT:

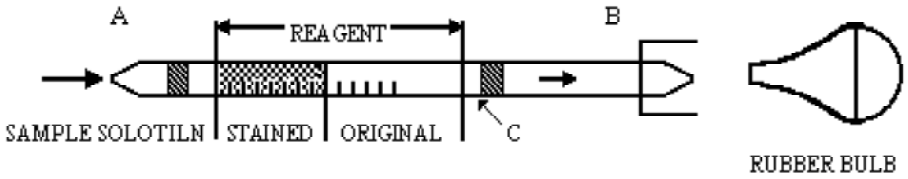

Fig.1

① Break both ends of a new detector tube with a file attached.

·CAUTION SAFETY GLASSES AND GLOVES SHOULD BE WORN TO PREVENT INJURY FROM SPLINTERING GLASS.

② Squeeze the rubber b (an extra option), insert the tube end (B) into it as it is and immerse filled end (A) of the tube in sample solution. Put the thumb off the rubber bulb, and the sample solution shall rise up from (A) to (C) of the tube.

③ Put the thumb off the rubber bulb, and the sample solution shall rise up. Salinity in the sample solution makes white stains.

④ When the sample solution rises up to (C) completely, remove the tube from the rubber bulb.

⑤ Replace the tube out of the sample solution. A reading can be obtained directly from the scale printed on the tube.

⑥ When the concentration is over the full scale (100 mg/1), dilute the sample solution and multiply the reading value with the dilution ratio.

SPECIAL NOTE: Ⅰ. The reading values are shown as total concentration of monovalent copper ion (Cu^{+}) and divalent copper ion. (Cu^{2+}).

Ⅱ. When the maximum point of the discoloured layer is made obliquely, read the concentration at the centre between the longest and the shortest points of the discoloured layer. The total stain length should be read, even if the stained layer gets multicolour discolouration.

3. CORRECTION FOR AMBIENT CONDITIONS:
Temperature; No temperature correction is necessary

4. INTERFERENCES:
Ferric ion of more than 20ppm produces a similar stain and the coexistence (with Copper ion) of more than doubled concentration of Copper ion will give higher readings. Zinc ion does] not affect the tube discolouration by itself but the coexistence (with Copper ion) of more than 100 mg/1 will give higher readings. Chlorine ion or Manganous ion does not affect the reading value. PH sampling time.

5. CHEMICAL REACTION IN THE DETECTOR TUBE:

$Cu^{2+}+NH_2OH \cdot H_2SO_4 \rightarrow Cu^{+}$

$Cu^{+}+C_{12}H_4N_2(CH_3)_2(C_6H_5)_2 \rightarrow$ Cheleate compound (Orange)

6. DISPOSAL OF TUBE:
USED TUBES SHOULD BE DISCARDED CAREFULLY ACCORDING TO RELEVANT REGULATIONS, IF ANY.

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