KITAGAWA
KOMYO RIKAGAKU KOGYO

INSTRUCTION MANUAL
CYANIDE ION DETECTOR TUBE

No.204S

★ DO NOT DISCARD THIS INSTRUCTION MANUAL UNTIL ALL THE TUBES IN THIS BOX ARE USED UP.

1. PERFORMANCE:

Measuring Range	:	0.2 - 5 ppm
and Sampling Time	:	2 minutes
Colour Change	:	White → Blue
Detectable Limit	:	0.05 ppm
Operating temperature	:	0 - 40 ℃ (32-104°F) (No correction is necessary.)

■CAUTION
1. DETECTOR TUBE CONTAINS REAGENTS.
2. DO NOT TOUCH THESE REAGENTS DIRECTLY ONCE TUBES ARE BROKEN.
3. KEEP THE TUBES OUT OF THE REACH OF CHILDREN.

NOTICE
1. DO NOT USE THIS TUBE OUTSIDE THE STATED OPERATING TEMPERATURE RANGE.
2. STORE TUBES IN A COOL AND DARK PLACE (0-25 ℃/32-77°F), AND USE BEFORE EXPIRATION DATE PRINTED ON TOP OF THE BOX.
3. PRIOR TO USE, READ CAREFULLY **ITEM 7. USER RESPONSIBILITY**.
4. READ THE CONCENTRATION IMMEDIATELY AFTER MEASUREMENT.

2. SAMPLING AND MEASUREMENT:

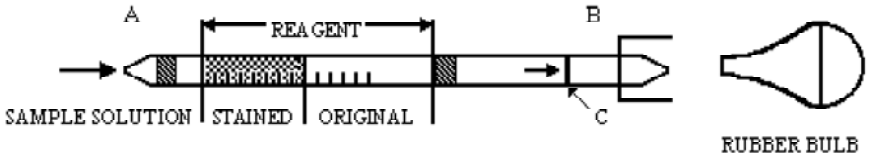

Fig.1

① Make the sample solution at pH 6 - 13 before test.
② Break both ends of the detector tube.

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

③ Squeeze the rubber bulb (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.
④ Put the thumb off the rubber bulb, and the sample solution shall rise up. Salinity in the sample solution makes white stains.
⑤ When the sample solution rises up to (C) completely, remove the tube from the rubber bulb.
⑥ Replace the tube out of the sample solution. And then, the reading can be obtained directly from the scale printed on the tube.
⑤ In case that concentration of sample solution is supposed to be above 5 ppm (over the full scale), dilute the sample solution accurately with distilled water. Then, measure the sample solution in accordance with the above procedure and multiply the reading value by the dilution ratio.

SPECIAL NOTE: When the top of the discoloured layer is made obliquely, read the concentration at the centre between the longest and the shortest points of the discoloured layer.

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

When the temperature is over 35 ℃, the bottom of the stained layer will be faded but the accuracy of the readings will not be affected.
When the temperature is low (especially below 10 ℃), the rubber bulb will be stiffened so that the sampling time will be getting longer (4 minutes at max.) than usual. In this case, it is recommendable to warm up the rubber bulb by hand. The sampling time may become shorter. However, the accuracy of the readings will not be affected due to difference of the sampling time.

4. INTERFERENCE:
Coexistence of more than 1,700 ppm of Carbonate ion or more than 100 ppm of Chloride ion will give higher reading. Coexistence of more than 2700 ppm of Sulphate ion will give lower reading. Thiocyanate ion will produce a similar stain and the coexistence of more than 200 ppm with Cyanide ion will give higher reading. Coexistence of Sulphide ion will give higher reading. When Dichromate ion, Permanganate ion, Ferricyanate ion or Residual Chloride ion is existed, pretreat reagent will be discoloured and the accuracy of the readings will not be affected.

5. CHEMICAL REACTION IN THE DETECTOR TUBE:
By reacting with o-Toluidine and Cupric sulphate (Ⅱ), complex salt is produced.

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

7. USER RESPONSIBILITY:
It is the sole responsibility of the user of this equipment to ensure that detector tubes are not used which are either beyond their expiration date or have a colour change different to that stated in the Performance specifications.
The Manufacturer and Manufacturer's Distributors shall not be otherwise liable for any incorrect measurement or any damages, whether damages result from negligence or otherwise.

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