

GASTEC Instructions for No.109AD Oil Mist (Mineral Oils) Airtec Tube

FOR SAFE OPERATION :

Carefully read this manual.

⚠ CAUTION : If you do not observe the following precautions, you may suffer injuries or damage to the product.

1. When breaking the tube ends, keep away from eyes.
2. Do not touch the broken glass tubes, pieces or reagent with bare hand(s).

△NOTES : For maintaining performance and reliability of the test results, observe the following.

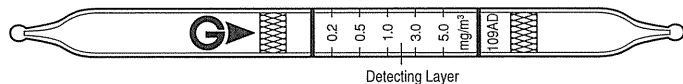
1. Use this tube within the temperature range of 0 - 40°C (32 - 104°F).
2. Shelf life and storage condition of the tube are marked on the label of the box of tube.
3. If absolute humidity exceeds 3mg/l, the reagent will be stained yellow, but the yellow colour does not affect the tube reading at all.

APPLICATION OF THE TUBE :

Use this tube for the detection of mainly Mineral oils, simply connect the pressure reducer to your high pressure air source, compressor, cylinder, or air line and adjust the flow metre to the required setting.

SPECIFICATION :

(Because of Gastec's commitment to continued improvement, specifications are subject to change without notice.)



| | | |
|------------------------------|---|-----------------------------|
| Measuring Range | 0.1 – 0.2 mg/m ³ | 0.2 – 5.0 mg/m ³ |
| Sampling Volume (Flow Metre) | 40000 mL | 20000 mL |
| Sampling Rate | 1000 mL/ min. | 1000 mL/ min. |
| Sampling Time | 40 minutes | 20 minutes |
| Correction Factor | 0.5 | 1 |
| Colour Change | Pale vermilion → Pale blue | |
| Reaction Principle | Oil mist react with detecting reagent to liberate chromic acid to produce pale blue discolouration. Oil Mist + Cr ⁶⁺ → Cr ³⁺ | |

Coefficient of Variation : 15% (for 0.2 to 1.0 mg/m³), 10% (for 1.0 to 5.0 mg/m³)

**** Shelf Life : Please refer to the validity date printed on the box of tubes.**

**** Store the tubes in the cool and dark place.**

CORRECTION FOR TEMPERATURE, HUMIDITY AND PRESSURE :

Temperature : No correction is required.

Humidity : No correction is required.

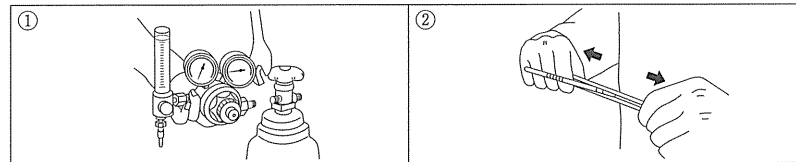
Pressure : To correct for pressure, multiply the tube reading by

$$\frac{\text{Tube Reading}^*2 \text{ (mg/m}^3\text{)} \times 1013 \text{ (hPa)}}{\text{Atmospheric Pressure (hPa)}}$$

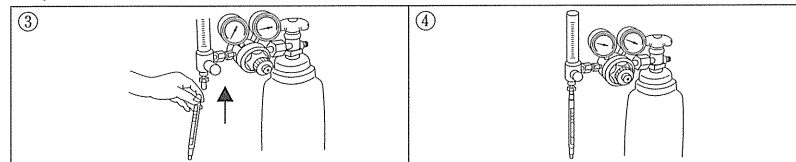
*2 This value is after other correction(s), if applied any.

MEASUREMENT PROCEDURE :

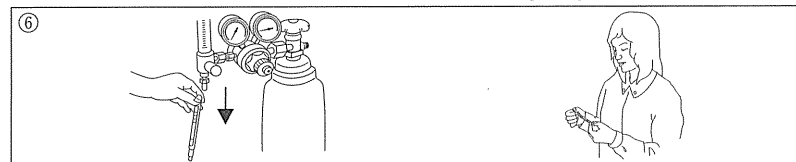
1. Attach a pressure reducer with gauge and flow metre to a cylinder, compressor or air line and adjust the flow metre to the required setting.
2. Break the tips off a fresh detector tube using the tube tip breaker and insert the tube into a tube holder.



3. Attach the rubber tube holder to the flow metre outlet. Make sure the tube arrow (**G**) on the tube is pointing in the downward direction.
4. Turn on the cylinder or compressor and confirm the flow metre according to each Airtec tube specifications.



5. Time the sampling with a stopwatch for 20 minutes.
For smaller measurements less than 0.2 mg/m³, continue the sampling for another 20 minutes to make a total of 40 minutes sampling.
6. As soon as the sampling time has finished, turn off the cylinder or compressor, and remove the tube from the tube holder and then read the colour-changed layer immediately.



7. If the sampling volume deviates from the volume specified in this instruction manual, correct the tube reading by the following formula. In this case, use the concentration as a reference.
8. If necessary, multiply correction factor to the tube reading.

$$\text{Concentration (mg/m}^3\text{)} = \frac{\text{Tube Reading}^{*1} \times 20000 \text{ (40000 when 40 minutes sampling)}}{\text{Sampled Volume (mL)}}$$

*1 This value is after multiplying correction factor of sampling time, if applied.

Use of the Compressed Breathing Air Measurement Kit Model. No.CG-1

When Airtec tube used with the Model. No. CG-1 kit, make sure to preset the flow rate of the CG-1 device and adjust the sampling time according to the following table. For the measurement procedure, carefully read and follow the instruction manual supplied with the CG-1 kit.

| | | |
|---------------------|--|-----------------------------|
| Measuring Range | 0.1 – 0.2 mg/m ³ | 0.2 – 5.0 mg/m ³ |
| Sampling Time | 20 minutes | 10 minutes |
| Specified Flow Rate | 3000 mL/min(±250 mL/min) | 3000 mL/min(±250 mL/min) |
| Correction Factor | 0.5 | 1 |
| Colour Change | Pale vermilion → Pale blue | |
| Reaction Principle | Oil mist react with detecting reagent to liberate chromic acid to produce pale blue discoloration. Oil Mist + Cr ⁶⁺ → Cr ³⁺ | |

INSTRUCTIONS ON DISPOSAL :

The reagent of the tube uses a small amount of hexavalent chromium. When disposing the tube regardless of whether it has been used or not, follow the rules and regulations of your local government.

WARRANTY :

If you have any questions regarding gas detection and quality of the tubes, please feel free to contact your Gastec representatives.

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