



INSTRUCTION MANUAL ETHYL ALCOHOL IN BLOOD

No. 290EA

★READ CAREFULLY THIS INSTRUCTION MANUAL AND THE INSTRUCTIONS OF THE ASPIRATING PUMP PRIOR TO USING THIS PRODUCT.

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

CAUTION FOR SAFETY

- 1) Glasses and gloves should be worn to prevent injury from shattered glasses.
- 2) Reagents inside the detector tubes contain chemical reagents. In case you touch the reagents, wash your hands thoroughly.
- 3) Keep the detector tubes out of the reach of children.
- 4) Be careful during sampling as the detector tube may fall off and sampling target may be spattered.

CAUTION FOR USE

- 1) Use only aspirating pump models AP-20, AP-20S, 400B, AP-1, AP-1S or 400A. Otherwise, considerable error in indication may occur.
- 2) Before measurement, check for leakage in the aspirating pump (refer to "3. CHECKING PRIOR TO USE (LEAKAGE TEST OF ASPIRATING PUMP)").
- 3) Do not use the detector tubes beyond the stated operating temperature range.
- 4) Store the detector tubes in a cool and dark place (0-25°C/32-77°F) and use before expiration date printed on the top of the box.
- 5) Read the concentration immediately after the measurement.
- 6) Prior to use, read carefully "7. USER RESPONSIBILITY".

1. PURPOSE

Use the detector tubes for measuring Ethyl alcohol in blood only.

2. PERFORMANCE

Measuring Range	0.2-2.0 mg/mL
Sampling Volume	300mL
Sampling Time	2 minutes (100mL, a flow control orifice is required)
Colour Change	Pink → Pale blue
Operating Temperature Range	0 ~ 40 °C (32 ~ 104°F) (Temperature correction is required.)

3. CHECKING PRIOR TO USE (LEAKAGE TEST OF ASPIRATING PUMP)

- ① Insert a sealed and unbroken detector tube into the aspirating pump securely.
- ② Align the guide marks on the handle and the stopper of the aspirating pump.
- ③ Pull the pump handle to the full stroke locked position and wait for 1 minute.
- ④ Unlock the handle and allow it to return slowly into the pump with holding the cylinder and handle securely.

CAUTION : HANDLE WILL TEND TO SNAP BACK INTO THE PUMP QUICKLY

- ⑤ If the handle returns completely to the original position, the performance is satisfactory. Otherwise, refer to the "MAINTENANCE" procedure in the instruction manual of the aspirating pump.

4. MEASUREMENT

PRE-TREATMENT

MAKE SURE TO ATTACH THE FLOW CONTROL ORIFICE TO THE ASPIRATING PUMP PRIOR TO MEASUREMENT.

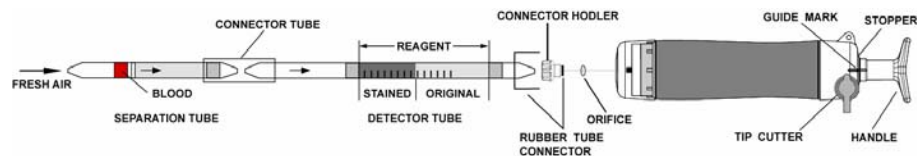


Fig.1

- ① Break both ends of the detector tube and separation tube.
- ② Connect the detector tube and separation tube with the connector tube as shown in Fig.1.
- ③ Insert the detector tube into the aspirating pump securely. (An arrow mark should point to the aspirating pump.)
- ④ Take 0.1mL of blood into a syringe and insert it into the separation tube.
- ⑤ Align the guide marks on the handle and the stopper of the aspirating pump.
- ⑥ Pull the pump handle at full stroke locked position and wait for 2 minutes.
- ⑦ Push back the pump handle and repeat the above ⑤ to ⑦ procedures 2 times more.
- ⑧ Remove the detector tube from the rubber tube connector and read the scale at the maximum point of the stained layer.
- ⑨ The scale is calibrated at 20°C (68°F). Readings obtained in other circumstances should be corrected by using "5. TEMPERATURE CORRECTION TABLE".

NOTE

- I. When aspirating outside air, make sure to aspirate fresh air. If gasoline or organic solvents is included in the air, readings will be higher.
- II. If sampling cannot be done in the sampling time, dilute the blood with purified water before the measurement. In this case, true concentration can be calculated with scale reading times diluted magnification.

5. TEMPERATURE CORRECTION TABLE (At 20°C)

Tube reading (mg/mL)	True Concentration of Ethyl alcohol in blood (mg/mL)				
	0°C (32°F)	10°C (50°F)	20°C (68°F)	30°C (86°F)	40°C (104°F)
2.0	---	---	2.0	1.7	1.5
1.5	---	1.9	1.5	1.3	1.1
1.0	2.2	1.3	1.0	0.8	0.7
0.5	1.1	0.6	0.5	0.4	0.3
0.2	0.5	0.2	0.2	0.2	0.2

6. DISPOSAL OF TUBE

Used tubes should be disposed carefully in accordance with relevant regulations, if any.

7. USER RESPONSIBILITY

It is the sole responsibility of the user of this equipment to ensure that the equipment is operated, maintained, and repaired in strict accordance with these instructions, and 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.