

- ★ 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.

#### 1. FEATURE:

The 290P II detector tube has strong sensitivity against Aromatic hydrocarbons of low-boiling point contained in Gasoline and/or Kerosine and is useful to discriminate Gasoline and/or Kerosine included in the object. Kindly note that the purpose of this tube is only for screening test.

#### 2. PERFORMANCE:

Sampling Time	: 1.5 minutes (100mL, 1 pump stroke)
Colour Change	: Refer to the undermentioned <b>ITEM 4. DISCRIMINATION</b>
Operating Temperature	: 0 - 40 °C (32-104°F) (No correction is necessary.)
Aspirating Pump	: Model AP-20, AP-20S, 400B, AP-1, AP-1S or 400A

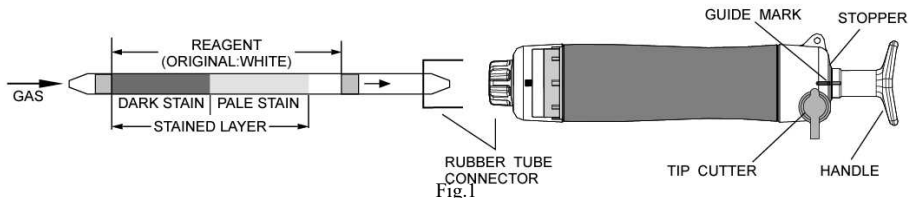
#### ⚠ CAUTION

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

#### NOTICE

1. USE ONLY WITH PUMP MODELS AP-20, AP-20S, 400B, AP-1, AP-1S OR 400A. OTHERWISE, CONSIDERABLE ERROR IN INDICATION MAY OCCUR.
2. BEFORE TESTING, CHECK THE ASPIRATING PUMP FOR LEAKS. (REFER TO ITEM 8. INSPECTION OF ASPIRATING PUMP.) ANY PUMPS SHOWING SIGNS OF LEAKAGE SHOULD BE CORRECTED BEFORE USE.
3. DO NOT USE THIS TUBE OUTSIDE THE STATED OPERATING TEMPERATURE RANGE.
4. STORE 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. PRIOR TO USE, READ CAREFULLY ITEM 9. USER RESPONSIBILITY.

#### 3. SAMPLING AND MEASUREMENT:



- ① Break both ends of the detector tube.

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

- ② Insert the detector tube into the aspirating pump securely as shown in Fig.1.
- ③ Put the end (with the reagent) of the detector tube near the object to be examined such as clothes, cloth, a carpet, and soil & sand, etc., as much as possible.
- ④ Align the guide marks on the shaft and stopper of the aspirating pump.
- ⑤ Pull the pump handle at a full stroke until it locks and wait for 1.5 minutes (90 seconds) or until the completion of sampling is confirmed with the flow indicator of the pump (See descriptions about the flow indicator in the instruction manual of the pump.), and gas near the object to be examined will be sampled into the detector tube.

**NOTE: PAY ATTENTION NOT TO BE SAMPLED WATER IN THE OBJECT TO BE EXAMINED INTO THE DETECTOR TUBE.**

- ⑥ On completion of sampling, examine the discolouration with the undermentioned **ITEM 4. DISCRIMINATION**.

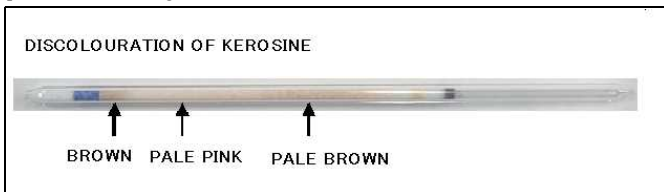
**NOTE: AFTER THE MEASUREMENT, CLEAN THE PUMP INSIDE BY PULLING-PUSHING OF HANDLE SEVERAL TIMES, AND RESIDUAL GASOLINE AND/OR KEROSENE WILL BE EXHAUSTED FROM THE PUMP INSIDE.**

#### 4. DISCRIMINATION:

Gasoline: Whole stain is discoloured to brown and greenish brown, and yellow stain is produced from the gas inlet of detector tube, as below.



Kerosine: Whole stain is discoloured to pink and pale brown, and dark brown/brown stains is produced from the gas inlet of detector tube, as below.



#### 5. INTERFERENCE:

Light oil produces a similar discolouration as Kerosine's one. Lubricating oil and Cooking oil does not produce any stained layer. Toluene produces dark brown stain. Xylene produces brown stain. Ethyl benzene produces greenish brown stain.

#### 6. CHEMICAL REACTION IN THE DETECTOR TUBE:

Iodine pentoxide is reduced.

#### 7. DISPOSAL OF TUBES:

**USED TUBES SHOULD BE DISPOSED CAREFULLY ACCORDING TO RELEVANT REGULATIONS, IF ANY.**

#### 8. INSPECTION OF ASPIRATING PUMP:

Checking for leaks;

- ① Insert a sealed, unbroken detector tube into the pump.
- ② Align the guide marks on the shaft and stopper of the pump.
- ③ Pull the handle to a full stroke and wait for 1 minute.
- ④ Unlock the handle and allow it to return slowly into the pump by 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 maintenance procedure in the instruction manual of the pump to correct the leakage.

#### 9. 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 the instructions provided with each Model AP-20, AP-20S, 400B, AP-1, AP-1S or 400A aspirating pump, 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.