Alcohol Tester (Detector)

CA-2000

HDTC

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1. Product Introduction :

HIGHLY RELIABLE, ACCURATE & QUICK
BREATH ALCOHOL ANALYZER

The Personalized Gurdian Against Drink Driving

1.Compact, accurate, reliable, smart looking and easy to use.

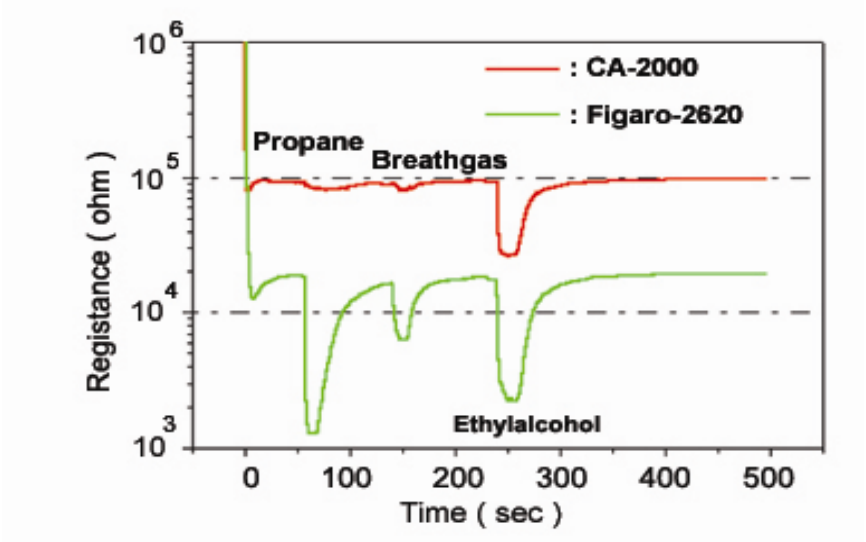
2.CA-2000 can be taken everywhere you go to help prevent drink driving and binge drinking.

3.CA-2000 uses same sophisticated oxide-semiconductor sensor as shown at right side and its test result is UNAFFECTED by COLA, COFFEE & SMOKING, which are commonly consumed with alcoholic beverage.

CA-2000 is an unique & highly-sophisticated alcohol analyzer utilizing the variation of electrical property value of the oxide-semiconductor when the alcohol substance is detected. And, with the development of new ceramic material combined with relevant catalyst, it can selectively analyze the alcohol concentration to the ppm unit existing in the human breath. Our laboratory made it in developing the highly-selective semiconductive sensor (CA-2000) reactive to alcohol substance only, which can be differentiated from the other semi-conductive sensor products (which are often affected by the other substances like smokes and smells of food). Furthermore, it did improve to the large extent the standby, response & recovery time which could be crucial in measuring gas concentration.

- Detection mechanism of our unique semi-conductive sensor

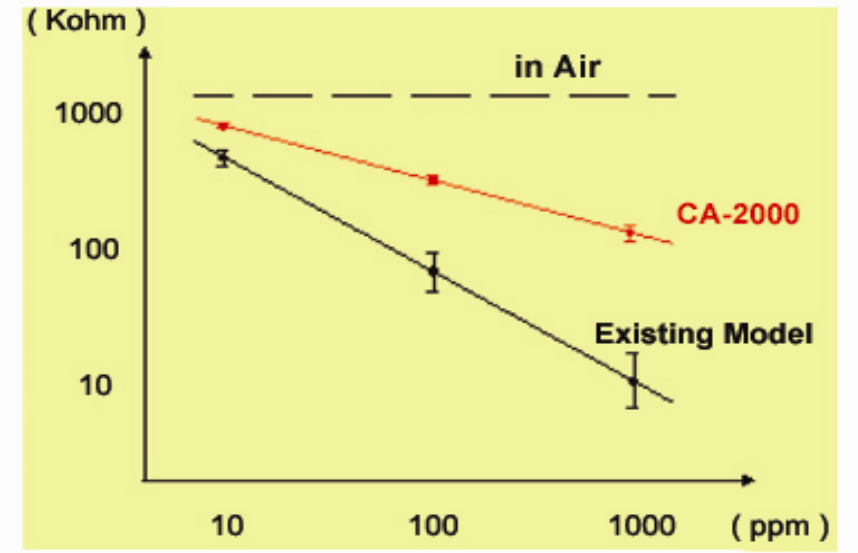
When the oxide having the property of n-type conductivity is open to the atmosphere, it decreases the number of electron affecting on electrical property by the adsorbed oxygen and results in increasing the resistance. And, afterwards, if the specific gas (reducing gas) exists in the atmosphere, it reacts with the adsorbed oxygen and increase the electron in the oxide, resulting in decreasing the resistance. So to speak,
the electrical property of the oxide is getting changed when a specific gas is exposed from the outside and our sensor can analyze the gas concentration from the variation of quantity.



**** Highly selective semi-conductive sensor**

<<--- CA-2000

<<--- Conventional detector



** Highest reliability**
– lowest error range

<<--- CA-2000

<<--- Conventional detector

2. Product Features :

a) Highly reliable accuracy by the most sophisticated sensor

CA-2000 adopts a highly-selective semiconductor sensor (reactive to only alcohol substance) designed by KAIST(Korea Advanced Institute of Science and Technology). CA-2000 is an unique breath tester adopting this most sophisticated technology of sensor.

b) Stable testing data

It allows you to get stable data for successive testing.

c) Digital type

It displays by 3 digits (0.xx% BAC/BRAC).

d) Wide detection range

0.00 ~ 0.40% BAC or 0.00 ~ 2.00 BRAC.

e) Long-term stability

CA-2000 can analyzes very precisely even after long time of uses.

f) Compact & light weight hand-held device

g) Short warm-up & response Time

After power on, less than 20sec. of warming up countdown (200 to 000) is needed to make it ready for testing. And, exhaling just for a few seconds will reach you to instantly read the testing numeric digits.

h) Longer life time

3,000 times testing

i) Quick Recovery Time

The sensor of CA-2000 can be purged in 30seconds for another time of testing. You don't need to be too patient to do consecutive testing.

j) Power

9V Alkaline battery & one cigar Jack DC adapter included

k) Sanitary Testing

CA-2000 includes 4pcs of mouthpiece for sanitary direct testing.

l) Alarm Sound

If you are out of legal limit range, alarm sound will be automatically beeping.
It could be customized depending on the countries.

m) Compact design and elegant outlook

3. How to use :

a) Turn on the PWR On/Off switch

- Soon after the power on, CA-2000 will start the countdown 200 to 000 on the display window.B122
- It is a "Warm-up" process to make the sensor and circuit be ready for testing.

b) When you hear beep sound & green lighting is on READY, please blow into for 3.5 seconds till you would hear another time of “Beep” sound.

N.B. 1. In this stage, if you don't within 30 seconds, it automatically shows OFF display for turn-off
2. In case you drink quite a little (if actual concentration would be below 0.01% BAC/ 0.05mg/L BRAC), it may not be activated. However, it shows still 0.00% and you're said to be in safe range.

c) Then, after 3.5 seconds while both READY and WARN lamps are flickering, the test result (BAC or BRAC) will be displayed by 3 digits for 15 seconds.

N.B. : 1. If the BAC / BRAC data would be over 0.05% / 0.25 mg/l(default setting) respectively, red WARN lamp will be flickering along with “Alarm” sound.
2. The “Alarm” level is adjustable pursuant to the local legal limit.

d) Finally, it shows “OFF” for turn-off.

e) For the successive testing, try again from No.1 to No. 3.

4. Precautions :

a) After drinking, it is recommended to test after 20 minutes.

- It is because it takes approximately 20 minutes for alcohol to be absorbed into blood from the digestive organs, and residual alcohol remaining in the mouth takes this long to dissipate.M135

b) Avoid testing in strong wind or in a closed room with contaiminated air.

c) When the BAT LOW lamp is on, it is advisable to replace 9V alkaline battery.

d) Do not blow cigarette smoke into the instrument. It will damage the sensor.

- Wait 1 minute after smoking before performing a test.

5. Unit Packing Details :

***CA-2000, *9V Battery, *Car adapter,**
***4 Mouthpieces, *Hard case, *Carrying bag,**
***Color unit package, *Strap, *Manual**

6. Technical Specification :

ITEM	SPECIFICATIONS
Sensor	Highly selective oxide-semiconductor sensor
Size	120 x 60 x 25 mm
Weight	200 grams
Housing	Shock resistant, molded plastic
Response time	3 sec.
Warm up time	20 sec.
Recovery time(sensor purge)	30 sec.
Battery life	Over 300 tests
Battery	9V alkaline
External power supply	12V DC adapter
Accuracy	< ±0.01% at 0.10% BAC, < ±0.05mg/liter at 0.50mg/liter BRAC
Detection range	0.00 ~ 0.40% BAC, 0.00 ~ 2.00 mg/liter BRAC
Calibration	BAC simulator (Model 34C/Guth Laboratory, USA)
Digital display	Three digits in numeric readout
Certification Status	CE, DOT…..
Packing	Tester, 9V alkaline battery, Cigar-Jack DC adapter, 4 pcs of mouthpieces, User's manual, Carrying Bag
Warranty	1 year

7. Comparison Table :

ITEM	Electro-chemical Sensor	The other semi-conductive sensor	CA-2000
Measuring method	Variation of Electromotiveforce	Variation of Electro-Conductivity	Variation of Electro-Conductivity
Deviation at 0.10%BAC	± 0.005%BAC	≥ ± 0.02%BAC	< ± 0.01%BAC
Characteristics	- Comparatively Accurate - Periodical re-calibration needed - Deviation is getting increased under consecutive and high concentration - Expensive	- Comparatively inaccurate - Low selectivity - Cheap price	- High selectivity - Reasonable price - Least deviation
Application	Police	Personal/Bar/Pub	Personal/Bar/Pub