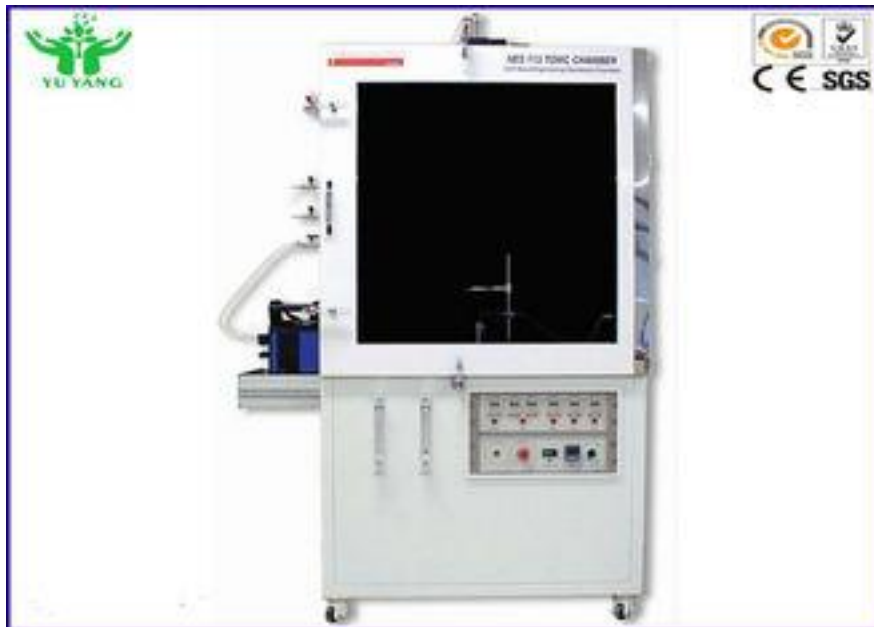




YUYANG INDUSTRIAL CO., LIMITED

China Manufacturer of Fire Testing Equipment

Laboratory NES713 Smoke Toxicity Index Test Chamber with Burning 100g Specimen



Laboratory NES713 Smoke Toxicity Index Test Chamber with Burning 100g Specimen

Description:

This tester measures the Toxicity Index by ppm in Naval Engineering Standard chamber when complete combustion occurs by burner.

NES 713 TOXIC Chamber meets the standard of NES 713 and is used to measure combustion characteristics about materials.

NES 713 Toxic Chamber measures Toxicity Index after perfect combustion by burning 100g of specimen.

Standard:

NES 713: Determination Of the Toxicity Index Of the Products of Combustion From Small Specimen of Materials
JB/T 10707: Low-Smoke Halogen-free Thermoplastic Compounds for Flame Retardant Cables

Feature:

1. Observation window made in reinforced plastic allows easy observation of combustion conditions during the test
2. Treating the inside of Chamber with Teflon Coating minimizes chemical reaction with gaseous materials generated in combustion.
3. Door locking device designed for easy opening/closing.
4. Specimen Support for Burner to be located in the center of the combustion mass and for test specimen to be easily loaded
5. Designed for testing in Auto/Manual Mode
6. Auto Ignition for controlling ignition and extinguishment of Gas Burner by Time Device
7. Auto Vent Mode allowing auto release of combustion gases generated in combustion by Time Device
8. Auto Stirrer Mode for complying with conditions of combustion gas stirrer by Time Device specified in the standard Time Device

Application:

The NES 713 test explores the toxicity of the products of combustion in terms of small molecular species arising when a sample of a material is completely burnt in excess air under specified conditions. The test does not necessarily determine the total toxicity of all the constituents of the products of combustion.

The test is useful for the quality control of materials and for research and development. It may be used to compare the particular combustion characteristic of a series of both natural and synthetic materials. The test may be used to specify a quality of a raw material or product. Combustion characteristics tests alone are not suitable for assessing the total fire hazard of products under actual fire conditions.

The toxicity index is defined as the numerical summation of the toxicity factor of selected gases produced by complete combustion of the material in air under the conditions specified. The toxicity factors are derived from the calculated quantity of each gas that would be produced when 100g of the material is burnt in air in a volume

Specification:

Model	YY435
Size	1,185(W)x700(D)x2,100(H) mm
Power	AC 220V, 50/60Hz, 10A

Weight	About 150kg
Instructions	Supplied
Exhaust	50L/s
Tool	Compressed air, vacuum cleaners, methane, propane gas (optional)

Test Result:

If 100g of material is burned and the material is diluted in the air of chamber, concentration of each generated gas is given by the following equation.

$$C \times 100 \times V$$

$$C_8 = \frac{\text{-----}}{m} \text{ (ppm)}$$

m

C = concentration of gas in test chamber (ppm)

m = fire test mass (g)

V = volume of test chamber (m³)

Toxicity Index

C₈₁ C₈₂ C₈₃ C_{8n}

$$\text{Toxicity Index} = \sum \frac{C_{f1}}{C_{f1}} + \frac{C_{f2}}{C_{f2}} + \frac{C_{f3}}{C_{f3}} + \dots + \frac{C_{fn}}{C_{fn}}$$

C_{f1} C_{f2} C_{f3} C_{fn}

1, 2, 3, ... indicates each found Gas.

C_f = concentration of the gas considered fatal to man for a 30 minute exposure time(ppm)

Toxicity Constitution & Concentration (ppm)

Carbon dioxide(CO₂) 100,000

Carbon monoxide(CO) 4,000

Hydrogen sulphide(H₂S) 750

Ammonia(NH₃) 750

Formaldehyde(HCHO) 500

Hydrogen chloride(HCl) 500

Acrylonitrile(CH₂CHCN) 400

Sulphur dioxide(SO₂) 400

Nitrogen oxides(NO+NO₂) 250

Phenol(C₆H₅OH) 250

Hydrogen cyanide(HCN) 150

Hydrogen bromide(HBr) 150

Hydrogen fluoride(HF) 100

Phosgene(COCl₂) 25