


## TEST REPORT

### UL 900

### Standard for Air Filter Units

<b>Job Number</b> ..... :	XK2204013021S		
<b>Test by (print+signature)</b> .....	Collin Zhou		
<b>Checked by (print+signature)</b> .....	Jean Shu		
<b>Approved by (print+signature)</b> .....	Andy Wang		
<b>Date of issue</b> .....	May 5, 2022		
<b>Total number of pages</b> .....	11 pages		
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<b>Applicant's name</b> .....	<b>Tact Global Holding Limited</b>		
<b>Address</b> .....	Unit G, 6th Floor, Yardley Commerical Building, 3 Connaught Road West, Sheung Wan, Hong Kong		
<b>Manufacturer's name</b> ..... :	<b>Guangzhou Anfu Environmental Protection Technology Co., Ltd.</b>		
<b>Address</b> .....	Room 107, 1st Floor, Building 2, No. 21, Hejing South Road, Liwan District, Guangzhou Guangdong, China		
<b>Test specification:</b>			
<b>Standard</b> .....	UL 900, Edition 8, Edition Date: April 21, 2015		
<b>Test procedure</b> ..... :	UL test report		
<b>Non-standard test method</b> .....	N/A		
<b>Test Report Form No.</b> .....	UL900_A		
<b>Test Report Form(s) Originator</b> .....	SiCT		
<b>Master TRF</b> .....	Dated 2021-02		
<b>Test item description</b> ..... :	Air purifier membrane		
<b>Trade Mark</b> .....	Purelife		
<b>Model/Type reference</b> ..... :	42, 80, 90, 5, 35		
<b>Ratings</b> ..... :	Class 1		

<b>Possible test case verdicts:</b>	
- test case does not apply to the test object.....:	N/A
- test object does meet the requirement.....:	P (Pass)
- test object does not meet the requirement .....	F (Fail)
<b>Testing.....:</b>	
Date of receipt of test item .....	April 25, 2022
Date (s) of performance of tests.....:	From April 25, 2022 to April 29, 2022

**General product information:**

The product covered in this report is air filter units of both washable and throwaway types used for removal of dust and other airborne particles from air circulated mechanically in equipment

Relevant Technical consideration:

-Mass of equipment: 750g

-Maximum ambient temperature: 25°C.

-All the test were carried on the model 90 and complied with the requirements of this standard

**Copy of marking plate:**

**Purelife**  
**Air purifier membrane**  
**Model: 90**  
**Class 1**

**Label of appliance****Note:**

1. The marking will be silk-screen printed or stamped on the product.
2. The above markings are the minimum requirements required by the safety standard as a reference marking label. For the final production samples, the additional markings which do not give rise to misunderstanding may be added.

UL 900			
Clause	Requirement – Test	Result - Remark	Verdict
<b>6</b>	<b>Performance Requirements</b>		<b>P</b>
6.1	An air filter unit shall not produce flame or extensive (25 or more) sparks which are sustained beyond the discharge end of the test duct when subjected to the Flame-Exposure Test, Section 7 and shall not cause the development of an area of more than 58 cm <sup>2</sup> (9 square inches) as measured below the smoke-density time curve.		P
	An adhesive material used for coating the filtering medium or other part of an air filter unit shall have a flash point of not less than 163°C (325°F) as determined by the Test Method for Flash and Fire Points by Cleveland Open Cup, ASTM D92.		P
<b>7</b>	<b>Flame-Exposure Test</b>		<b>P</b>
7.1	The flame-exposure test apparatus is to consist of an air duct provided with means for supporting a sample air filter unit and to expose the air filter unit to an igniting flame under controlled conditions of air velocity. The apparatus is to provide means for observation of the sample filter while under test and to measure and observe the production of flame, sparks, and smoke resulting from the application of the flame		P
	The general arrangement of the test apparatus is illustrated in Figure 7.1.		P
	The test apparatus is to be located in an environmentally controlled test room so as not to be adversely affected by wind, heat, cold, or other environmental factors. The air is to be drawn from the room in which the air filter unit is installed and discharged into the test room. The minimum distance from the end of the duct to any obstruction is to be 0.91 m (3 feet). An exhaust hood is to be located at the discharge end of the test apparatus and maintained so that the test apparatus discharge air velocity with the exhaust system on does not exceed the test apparatus discharge air velocity with the exhaust system off.		P
	The temperature of the room is to be in the range of 15°C and 32°C (60°F and 90°F) with a relative humidity of less than 65 percent at the beginning of the flame exposure test.	25°C	P
	The minimum time between test exposures during the flame exposure test is to be 5 minutes.	5 minutes.	P

UL 900			
Clause	Requirement – Test	Result - Remark	Verdict
	<p>The duct is to be constructed of steel with a minimum thickness of 1.6 mm (1/16 inch). The duct section is to be 533 by 533 mm (21 by 21 inches) to accommodate filters having nominal face dimensions of 500 by 500 mm (20 by 20 inches). When filters of other dimensions up to a nominal 600 by 600 mm (24 by 24 inches) are to be tested, an adapter section is to be inserted at the proper location. The length of any such adapter section is to be sufficient to accommodate the depth of the filter under test. The length of the discharge end of the duct is to be 2.4 m (8 feet) ±0.1 m (4 inches) measured from the downstream face of the filter to the discharge end of the duct. The duct is not to be insulated and all joints are to be gasketed to prevent leakage.</p>		P
	<p>There is to be a minimum distance of 1.8 m (71 inches) from the upstream face of a filter, as installed in the apparatus, and the discharge end of a fan scroll or transition piece connected to the duct. The upstream duct section is to be equipped with means for assuring a uniformly distributed air flow in the duct immediately ahead of the filter location.</p>		P
	<p>The apparatus is to include a blower capable of overcoming the resistance to flow offered by the filter under test and the duct system. The means for controlling the discharge from the blower is not to include dampers or orificing devices placed on the discharge side of the blower.</p>		P
	<p>The means for mounting and securing the frame of an air filter is to be rigid and of a nature providing for a reasonably tight seal to prevent bypassing of the air stream around the filtering media. Flanges or other devices are not to project beyond the inside dimensions of the filter frame or to cover the upstream or downstream faces of the frame to an extent which materially disturbs the uniformly distributed air flow or which insulates more than 50 percent of any combustible frame material from exposure to the igniting flame.</p>		P
	<p>Access doors and observation windows are to be provided in the duct sidewall to facilitate the insertion and mounting of a filter for test and the observance of the ignition flame and its effects on bothfaces of the filtering media. The doors and windows are to be gasketed, and the doors are to be insulated.</p>		P

**UL 900 TEST LIST SUMMARY**

Clause	Performance	Required	Remarks
7	Flame-Exposure Test	Y	P

Remarks: N/A: not applicable. Y: Yes. P: Pass.

Engineering notes:

Air Filter Units - UL 900, **Edition 8, Edition Date: April 21, 2015.**

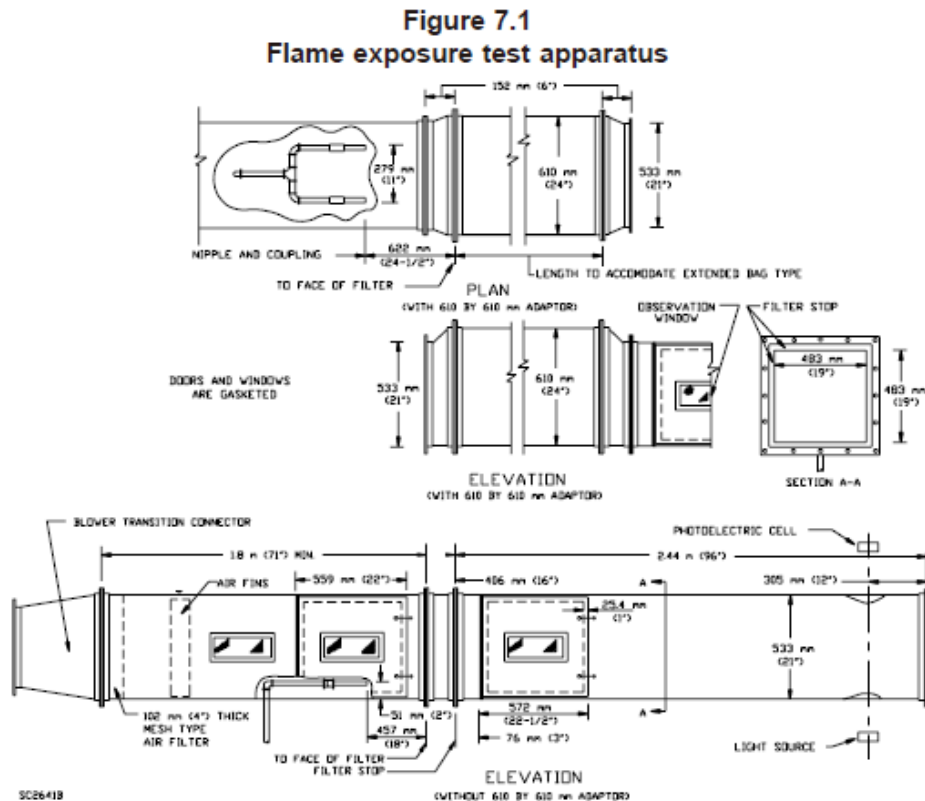
<b>TABLE: List of critical components</b>					<b>P</b>
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity
Sponge	FORMOSA CHEMICALS & FIBRE CORP PLASTICS DIV	TK-01	HBF	UL 94	UL
Supplementary information:					

## Flame-Exposure Test

### Methods:

The flame-exposure test apparatus is to consist of an air duct provided with means for supporting a sample air filter unit and to expose the air filter unit to an igniting flame under controlled conditions of air velocity. The apparatus is to provide means for observation of the sample filter while under test and to measure and observe the production of flame, sparks, and smoke resulting from the application of the flame.

The general arrangement of the test apparatus is illustrated in Figure 7.1.



The temperature of the room is to be in the range of 15°C and 32°C (60°F and 90°F) with a relative humidity of less than 65 percent at the beginning of the flame exposure test.

The minimum time between test exposures during the flame exposure test is to be 5 minutes.

The duct is to be constructed of steel with a minimum thickness of 1.6 mm (1/16 inch). The duct section is to be 533 by 533 mm (21 by 21 inches) to accommodate filters having nominal face dimensions of 500 by 500 mm (20 by 20 inches). When filters of other dimensions up to a nominal 600 by 600 mm (24 by 24 inches) are to be tested, an adapter section is to be inserted at the proper location. The length of any such adapter section is to be sufficient to accommodate the depth of the filter under test. The length of the discharge end of the duct is to be 2.4 m (8 feet)  $\pm$  0.1 m (4 inches) measured from the downstream face of the filter to the discharge end of the duct. The duct is not to be insulated and all joints are to be gasketed to prevent leakage.

There is to be a minimum distance of 1.8 m (71 inches) from the upstream face of a filter, as installed in the apparatus, and the discharge end of a fan scroll or transition piece connected to the duct. The upstream duct section is to be equipped with means for assuring a uniformly distributed air flow in the duct immediately ahead of the filter location.

The apparatus is to include a blower capable of overcoming the resistance to flow offered by the filter

under test and the duct system. The means for controlling the discharge from the blower is not to include dampers or orificing devices placed on the discharge side of the blower.

The means for mounting and securing the frame of an air filter is to be rigid and of a nature providing for a reasonably tight seal to prevent bypassing of the air stream around the filtering media. Flanges or other devices are not to project beyond the inside dimensions of the filter frame or to cover the upstream or downstream faces of the frame to an extent which materially disturbs the uniformly distributed air flow or which insulates more than 50 percent of any combustible frame material from exposure to the igniting flame..

Access doors and observation windows are to be provided in the duct sidewall to facilitate the insertion and mounting of a filter for test and the observance of the ignition flame and its effects on both faces of the filtering media. The doors and windows are to be gasketed, and the doors are to be insulated.

The igniting flame is to be that resulting from the burning of unpremixed natural gas discharged at low velocity into the air stream at a rate liberating 70.3 kW (4000 Btu per minute)  $\pm 5$  percent. The gas-burner nozzles are to consist of two malleable-iron pipe elbows or couplings, 1 inch USA Pipe Size, ANSI/ASME B36.10 M, Welded and Seamless Wrought Steel Pipe, the outlets of which are to be located 457 mm (18 inches) upstream from the face of a nominal 500 by 500 mm (20 by 20 inch) filter and 622 mm (24-1/2 inches) upstream from the face of a nominal 600 by 600 mm (24 by 24 inch) filter. The nozzles are to be arranged to discharge gas downstream parallel to the flow of air. The gas nozzles are to be connected, using nipples to a tee located on the center line of the duct. The tee is to be connected through a control valve to the source of gas. The two nozzles are to be spaced 279 mm (11 inches) apart, as measured between their center lines, and are to be positioned 51 mm (2 inches) above the bottom of the test duct as measured to their center lines. The vertical position of each nozzle above the floor of the test duct may be varied as much as 25.4 mm (1 inch) to provide for two patterns of flame impingement on the test filter.

A flowmeter is to be employed to measure the gas input to the igniting flame.

Gas pilots are to be limited to an input of 2 percent or less of the input to the main-burner nozzles

Samples are to be clean, unused filters selected on the basis of 7.20, and are to be subjected to a minimum of 2 hours of conditioning in the test room.

## Test Result:

An air filter unit (~~was~~ / was not) produce flame or extensive (25 or more) sparks which are sustained beyond the discharge end of the test duct when subjected to the Flame-Exposure Test

Air filter unit (~~was~~ / was not) cause the development of an area of more than 58 cm<sup>2</sup>(9 square inches) as measured below the smoke-density time curve.

components (frame material, sealants, gaskets, and the like) of filters (~~was~~ / was not) directly exposed to the test flames during the flame exposure test in the test duct.

The Classification of the filter unit is (Class 1 ~~or Class 2~~).

*Pictures*

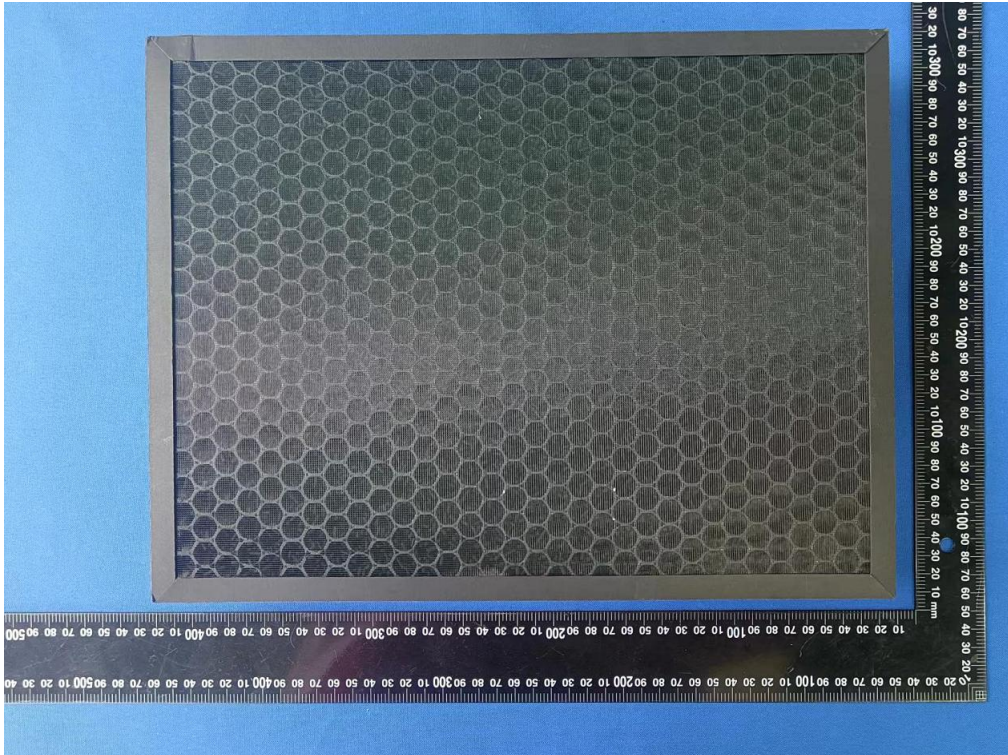


Figure 1

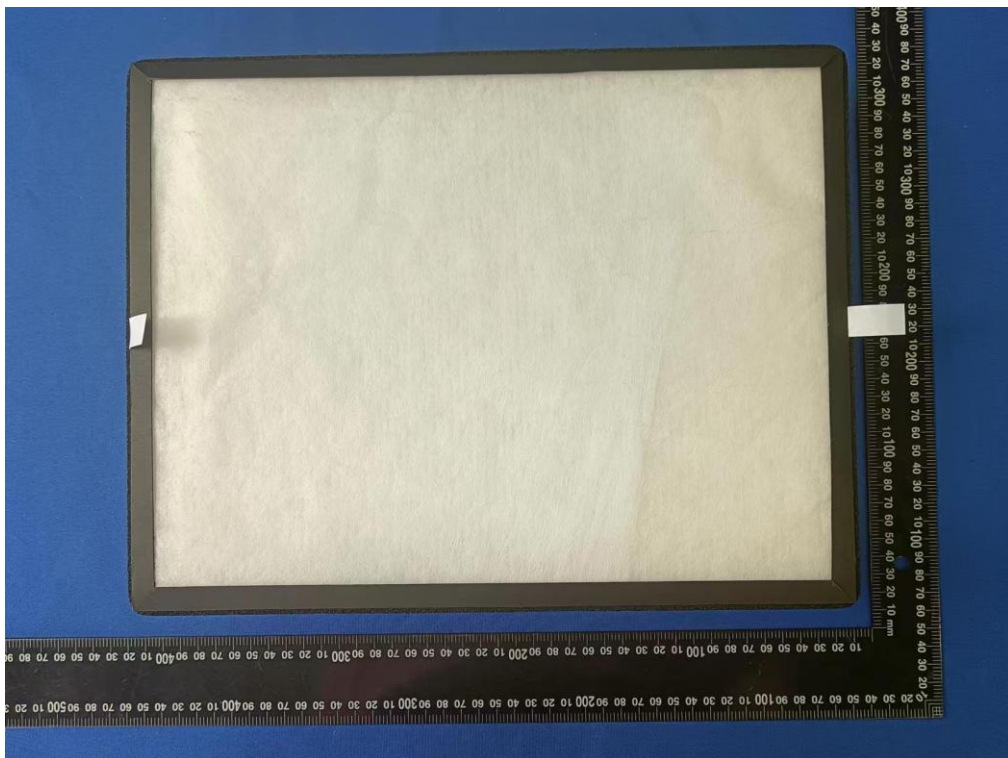


Figure 2

*Pictures*

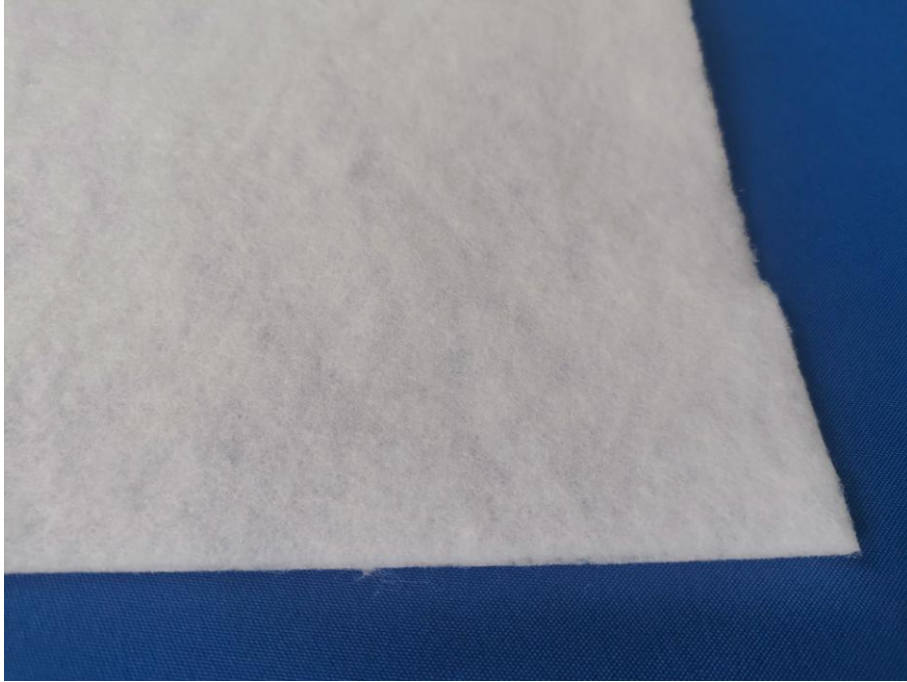


Figure 3

\*\*\*\*\* End of Report \*\*\*\*\*