

IMSYS Engineering Service Ltd. Head office: 1033 Budapest, Mozaik street 14/A Site: 5100 Jászberény, Necső telep 1. Phone: (+36) 1 430 0014 www.imsys.hu 	Test report Material Testing Laboratory	Testing laboratory accredited by NAH under No. NAH-1-1830/2023.
		Identification number: AFN-7.08.01-A
		Contract number: 190/2024.
Version: 1.3. (27. 04. 2023.)	Page 1 / 10	Test report No.: 2024/25.

TEST REPORT

Client: *NORRES Schlauchtechnik GmbH*

Date of releasing test report: 20. 06. 2024

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1. TEST SAMPLE

Sample: plastic film specimens (**Fig. 1**)

Sample ID's: AIRDUC PUR 355 FOOD – 1.00 mm
AIRDUC PUR 355 FOOD – 1.20 mm
AIRDUC PUR 355 FOOD – 1.30 mm
AIRDUC PUR 355 FOOD – 1.50 mm

Date of sample receiving: 12. 06. 2024



Figure 1. Received plastic film samples

2. CLIENT

Name: NORRES Schlauchtechnik GmbH

Address: Stadthafen 12-16, 45881 Gelsenkirchen, Germany

3. TEST IS CARRIED OUT BY

Name: Imsys Kft. Material Testing Laboratory

Address: 1. Necső telep, 5100 Jászberény

4. PURPOSE OF THE TEST, APPLIED METHODOLOGY

The purpose of the test was to investigate the samples provided by the Client with the following methods:

- Flammability test according to UL94:2013 - Vertical Burning Test.

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5. TEST CONDITIONS

5.1. DATE OF THE TEST:

13. 06. 2024. – 20. 06. 2024.

5.2. EQUIPMENTS:

Combustion chamber: Wazau, UL94

Serial number: 14001

Date of calibration: 27. 10. 2023.

Climate chambers:

CTS C-70/350

Serial number: 137214

Date of calibration: 23. 08. 2022.

Memmert CTC-256

Serial number: Z319.0034

Date of calibration: 25. 04. 2023.

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5.3. CONDITIONING:

Prior to examination, 5 test specimens were conditioned in CTS C-70/350 type climate chamber, with the following parameters:

Temperature: 23 ± 2 °C

Humidity: $50 \pm 5\%$

Conditioning time: 48 hours

Prior to examination 2 sets of 5 specimens were conditioned in Memmert CTC-256 type climate chamber, with the following parameters:

Temperature: 70 ± 2 °C

Conditioning time: 168 hours

then the specimens were cooled in a desiccator at room temperature for 4 hours.

After conditioning, the samples were tested within 30 minutes.

5.4. TESTING CONDITIONS

5.4.1 UL94-2013 flammability test - Vertical Burning Test

Test sample	1.00, 1.20, 1.30 and 1.50 mm thick specimens
Arrangement	vertical
Number of specimens tested:	5 specimens / sample / temperature

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6. TEST RESULTS

Test results and classification of the sample can be seen in **Table 1**. The detailed results of each measurement can be found in later chapters.

Table 1: Summary of results

Sample	Classification
AIRDUC PUR 355 FOOD – 1.00 mm	V2
AIRDUC PUR 355 FOOD – 1.20 mm	V2
AIRDUC PUR 355 FOOD – 1.30 mm	V2
AIRDUC PUR 355 FOOD – 1.50 mm	V2



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6.1. FLAMMABILITY TEST

The performed flammability test (UL94) results are in **Tables 2-9**. Based on the examinations AIRDUC PUR 355 samples met the requirements of V2 classification.

Table 2 Vertical flammability results of AIRDUC PUR 355 FOOD – 1.00 mm after conditioning at 23 °C/50% RH

Specimen Nr.	t ₁ afterflame time (s)	t ₂ afterflame time (s)	t ₃ afterglow time (s)	Burn up to clamp (yes/no)	Cotton ignited (yes/no)
1	2	2	-	no	yes
2	2	3	-	no	yes
3	1	3	-	no	yes
4	2	6	-	no	yes
5	3	2	-	no	yes
Maximum	3	6		Classification	V2
Summa	26				

Table 3 Vertical flammability results of AIRDUC PUR 355 FOOD – 1.00 mm after conditioning at 70 °C

Specimen Nr.	t ₁ afterflame time (s)	t ₂ afterflame time (s)	t ₃ afterglow time (s)	Burn up to clamp (yes/no)	Cotton ignited (yes/no)
1	4	2	-	no	yes
2	3	3	-	no	yes
3	3	4	-	no	yes
4	2	1	-	no	yes
5	7	1	-	no	yes
Maximum	7	4		Classification	V2
Summa	30				

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Table 4 Vertical flammability results of AIRDUC PUR 355 FOOD – 1.20 mm after conditioning at 23 °C/50% RH

Specimen Nr.	t ₁ afterflame time (s)	t ₂ afterflame time (s)	t ₃ afterglow time (s)	Burn up to clamp (yes/no)	Cotton ignited (yes/no)
1	2	0	-	no	yes
2	2	1	-	no	yes
3	3	0	-	no	yes
4	3	1	-	no	yes
5	3	0	-	no	yes
Maximum	3	1		Classification	V2
Summa	15				

Table 5 Vertical flammability results of AIRDUC PUR 355 FOOD – 1.20 mm after conditioning at 70 °C

Specimen Nr.	t ₁ afterflame time (s)	t ₂ afterflame time (s)	t ₃ afterglow time (s)	Burn up to clamp (yes/no)	Cotton ignited (yes/no)
1	5	2	-	no	yes
2	6	2	-	no	yes
3	7	3	-	no	yes
4	3	1	-	no	yes
5	7	1	-	no	yes
Maximum	7	3		Classification	V2
Summa	37				

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Table 6 Vertical flammability results of AIRDUC PUR 355 FOOD – 1.30 mm after conditioning at 23 °C/50% RH

Specimen Nr.	t ₁ afterflame time (s)	t ₂ afterflame time (s)	t ₃ afterglow time (s)	Burn up to clamp (yes/no)	Cotton ignited (yes/no)
1	10	6	-	no	yes
2	6	5	-	no	yes
3	7	2	-	no	yes
4	8	5	-	no	yes
5	10	2	-	no	yes
Maximum	10	6		Classification	V2
Summa	61				

Table 7 Vertical flammability results of AIRDUC PUR 355 FOOD – 1.30 mm after conditioning at 70 °C

Specimen Nr.	t ₁ afterflame time (s)	t ₂ afterflame time (s)	t ₃ afterglow time (s)	Burn up to clamp (yes/no)	Cotton ignited (yes/no)
1	9	1	-	no	yes
2	9	1	-	no	yes
3	7	3	-	no	yes
4	8	1	-	no	yes
5	9	2	-	no	yes
Maximum	9	3		Classification	V2
Summa	50				

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Table 8 Vertical flammability results of AIRDUC PUR 355 FOOD – 1.50 mm after conditioning at 23 °C/50% RH

Specimen Nr.	t ₁ afterflame time (s)	t ₂ afterflame time (s)	t ₃ afterglow time (s)	Burn up to clamp (yes/no)	Cotton ignited (yes/no)
1	8	8	-	no	yes
2	10	2	-	no	yes
3	9	2	-	no	yes
4	8	7	-	no	yes
5	5	2	-	no	yes
Maximum	10	8		Classification	V2
Summa	61				

Table 9 Vertical flammability results of AIRDUC PUR 355 FOOD – 1.50 mm after conditioning at 70 °C

Specimen Nr.	t ₁ afterflame time (s)	t ₂ afterflame time (s)	t ₃ afterglow time (s)	Burn up to clamp (yes/no)	Cotton ignited (yes/no)
1	10	2	-	no	yes
2	7	1	-	no	yes
3	7	2	-	no	yes
4	9	3	-	no	yes
5	10	1	-	no	yes
Maximum	10	3		Classification	V2
Summa	52				

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The test results presented in this report relate only to the sample/specimen tested.

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Material Testing Laboratory of IMSYS Ltd.

The test was accomplished by:



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Béla Molnár

Measurement group leader

Verified by:



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Emese Slezák

Testing engineer