# mumu SURGICAL MASK WITH EARLOOP

According to Annex B of EN 14683:2019 + AC:2019 Type IIR and "BFE % ≥98"

# **PURPOSE OF USE**

Face mask can be used lor hygenic applications. Suitable lor use by physicans and patients. Made of non-woven fabric. Air permeable structure allows easy breathing. Does not contain allergic materials. 3 ply structure. Non-irritating.





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Filtered and 3-Ply

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EN 14683.2019+AC:2019 TIP/TYPE IIR; BFE % 298 3 KATLI LASTIKLI CERRAHI MASKE DI V QI IQQI AI MAQK WITLI EARI OOD

**3 KATLI LASTIKLI CERRAHI MASKE** 3-PLY SURGICAL MASK WITH EARLOOP

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MY TİCARET VE MEDİKAL A.Ş. Ömerli Mah. General Sükrü Koraltı Cad No:33 Arnavutköy / İstanbul / TÜRKİYE Tel: 0212 438 20 64 Faks: 0212 438 20 65 info@mvmedikal.com.tr

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www.mymedikal.com.tr







This is to certify that **Quality Management System** 

of

MY TİCARET VE MEDİKAL ANONİM ŞİRKETİ

ÖMERLİ MAHALLESİ GENERAL ŞÜKRÜ KORALTI CAD. NO: 33 ARNAVUTKÖY - İSTANBUL / TÜRKİYE

complies with requirements of

# **ISO 9001:2015**

#### This certificate is valid concerning all activities related to;

PRODUCTION AND SALE OF LATEX POWDERED / POWDER FREE EXAMINATION GLOVES, NITRILE POWDER FREE EXAMINATION GLOVES, STERIL / NON-STERILE SURGICAL GLOVES, STERIL / NON-STERILE SPONGE GAUZE COMPRESS, STERIL / NON-STERIL COMPRESSE ABDOMINALE, STERIL / NON-STERILE COTTON PAD, GAUZE, STERILE / NON-STERILE SURGICAL MASK

LATEKS PUDRALI / PUDRASIZ MUAYENE ELDIVENI, NITRIL PUDRASIZ MUAYENE ELDIVENI, STERIL / NON-STERIL CERRAHI ELDIVEN, STERIL / NON-STERIL SPANÇ GAZ KOMPRES, STERIL / NON-STERIL BATIN KOMPRES, STERIL / NON-STERIL PAMUKLU PED, GAZLI BEZ, STERIL / NON-STERIL CERRAHI MASKE ÜRETİMİ VE SATIŞI

ISO 01 940 1179 *Certificate No.*  Jun. 5, 2020 *Date of this Certificate* 

Jun. 4, 2021 Certification Expiry Date

May. 28, 2020 *Date of Audit*  Jun. 5, 2020 *Date of Registration* 

Managing Director / Director



Medicert Uluslararası Ürün Ve Sistem Belgelendirme Ltd. Şti. Tersane Mah. Cemal Gürsel Cad. No:11/3 Halide Hnm. Apt. Karşıyaka / İzmir Tel: 0232 327 33 44 www.medicert.com.tr info@medicert.com.tr

\* You can query the validity of this certificate by sending an e-mail to info@medicert.com.tr.



This is to certify that

Pertificate I Registration

## **Quality Management System**

for Medical Devices

of

## MY TİCARET VE MEDİKAL ANONİM ŞİRKETİ

ÖMERLİ MAHALLESİ GENERAL ŞÜKRÜ KORALTI CAD. NO: 33 ARNAVUTKÖY - İSTANBUL / TÜRKİYE

complies with requirements of

# ISO 13485:2016

#### This certificate is valid concerning all activities related to;

SALES OF LATEX POWDERED / POWDER-FREE EXAMINATION GLOVES- NITRILE POWDER-FREE EXAMINATION GLOVES- POWDERED / POWDER-FREE STERILE SURGICAL GLOVES-VINYL POWDERED / POWDER-FREE EXAMINATION GLOVES. PRODUCTION AND SALE OF DISPOSABLE NON-STERILE MASKS.

LATEKS PUDRALI/PUDRASIZ MUAYENE ELDİVENİ- NİTRİL PUDRASIZ MUAYENE ELDİVENİ-PUDRALI/PUDRASIZ STERİL CERRAHİ ELDİVEN-VİNİL PUDRALI/PUDRASIZ MUAYENE ELDİVENİ SATIŞI. TEK KULLANIMLIK NON-STERİL MASKE ÜRETİMİ VE SATIŞI.

ISO 02 836 1179 *Certificate No.*  Feb. 26, 2020 *Date of this Certificate* 

Feb. 21, 2020 *Date of Audit*  Feb. 26, 2020 *Date of Registration*  Feb. 25, 2021 *Certification Expiry Date* 

Managing Director / Director



Medicert Ulusiararası Ürün Ve Sistem Belgelendirme Ltd. Şti. Tersane Mah. Cemal Gürsel Cad. No:11/3 Halide Hnm. Apt. Karşıyaka / İzmir Tel: 0232 327 33 44 www.medicert.com.tr info@medicert.com.tr

\* You can query the validity of this certificate by sending an e-mail to info@medicert.com.tr.



# Certificate of Registration 2020

This is to certify that the registration of

MY TICARET VE MEDIKAL A.S OMERLI MAH. GENERAL SUKRU KORALTI CAD. NO: 33 ARNAVUTKOY, ISTANBUL, TURKEY - 34555

with U.S. Food and Drug Administration as required by 21 CFR Part 807 is successfully completed by Liberty Management Group Ltd with the information provided by My Ticaret Ve Medikal A.S

Owner/Operator Number	10075681
Date of Registration	June 23, 2020
Date of Expiration	December 31, 2020
US Agent	Liberty Management Group Ltd.
Device Listing Numbers	See Annex
Certificate Number	3006230220

This certificate does not make representations or warranties to any person or entity other than the named certificate holder; it is issued for record keeping purpose only. This certificate does not denote endorsement or approval of certificate holder's facility or product by the U.S. food and Drug Administration. Liberty management Group Ltd. assumes no liability to any person or entity in connection with the foregoing.

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Manoj Zacharias President Liberty Management Group LTD. Dated: June 23, 2020



# **Certificate of Registration**2020

# **Annex - Device Listings**

Listing Number	Code	Device Name - Proprietary Names
D409537	QKR	Face mask (except N95 respirator) for general public/healthcare personnel per IIE guidance - Mumu Surgical Mask



# EC DECLARATION OF CONFORMITY

Manufacturer's Name:	MY TİCARET VE MEDİKAL A.Ş.				
Manufacturer Address:	Ömerli Mah. General Şükrü Koraltı Cad. No:33 Arnavutköy/İSTANBUL				
Medical Devices:	Surgical Mask, 3-ply with earloop Ref No: MM.NS.LM.01				
Classification:	Medical Device Directive-Annex IX, Rule I, Class-I (Type IIR)				
GMDN Code and Term:	57794 / Surgical – Medical Respirator				
Scope of Application:	All batches supplied to which the Declaration of Conformity Procedure has been applied.				
Declaration:	Conformity of the products has been assessed in accordance with Annex VII of the Directive. A dossier of technical documentation, as required by the Directive is available. The product listed is designed, manufactured and tested in accordance with the information set out in the dossier. We declare out products comply with EN 14683:2019+AC:2019 as Type IIR				
Verification Certificates:	Quality Management System- Medical devices EN ISO13485:2016 Certificate No: ISO 02 836 1179 Quality Management System EN ISO 9001:2015 Certificate No: ISO 01 940 117				

**Standards Applied:** 

EN ISO 13485 EN ISO 9001:2015	Medical devices-Quality management systems - Requirements for regulatory purposes Quality management systems
EN ISO 15223-1	Medical devices — Symbols to be used with medical device labels, labelling and information to be supplied
<i>MDD 93/42/EEC</i>	Medical devices directive
EN ISO 1041	Information supplied by the manufacturer of medical devices
EN ISO 14683:2019+AC: 2019	Medical face masks - Requirements and test methods
EN ISO 62366-1	Medical devices - Part 1: Application of usability engineering to medical devices
EN ISO 14971	Medical devices - Application of risk management to medical devices

### **Authorised Signatory**

:

:

:

Name-Surname :

Position

CEO

Murat YILDIZ



Signed Dated

22.03.2020

# **TECHNICAL FILE**

# MUMU SURGICAL MASK



MY TİCARET VE MEDİKAL A.Ş. Ömerli Mahallesi General Şükrü Koraltı Caddesi No:33 Arnavutköy İstanbul/TURKEY <u>www.mymedikal.com.tr</u> info@mymedikal.com.tr



#### **0. DEFINITION**

Mumu 3-ply surgical mask (facial mask for medical use), can be fit according to each face measures and shapes, flexible and can be used without disturbing the soft structure. Air permeable and lets breathing easily. Non-irritating. Provides protection against bacteria.

#### 1. QUALITY SYSTEM OF MY TICARET VE MEDIKAL

MY TICARET VE MEDIKAL has been manufacturing its products with the quality

systems as given below;

- EN ISO 13485:2016 Quality Assurance System-Medical Devices

:

- EN ISO 9001:2015+AC Quality Assurance System

#### 2. PRODUCT IDENTIFICATION AND RECOMMENDED USE :

The product is made by non wowen fabric. The product's composition is polypropylene and does not includes latex. The product is breathable and has no special personal on environmental hazards. The product is made automatically in hygienic conditions. The product prevents the potential reactions between all kind of liquids and particles, microorganisms.



Dimension	D. J. C.	Length	175 mm
	Body Size	Width	95 mm
	Height of	Earloop	70 mm
	Lenght of	Earloop	160 mm
	Pleat l	Depth	10 mm
	Length of I	Nose-piece	90 mm



Characteristic	Specification			
		[	Sauchard 25, 20 an	
Materials		Outer Material	Spunbond 25 - 30 gr	
	Mask Body	Filter Layer	Meltblown 25 gr	
		Inner Material	Spunbond 20-25 gr	

#### 3. SUBSTANCE/MIXTURE OF RAW MATERIAL

#### **3.1.** Material Safety Data Sheet (MSDS)

#### **3.1.1.** Composition:

May contain color pigments if the product is in color. White color may contain Ti02. Other major components......\*No Chemicals (in relevant concentration) that are in list of dangerous substances.....\*.No

#### 3.1.2. Hazards identification

Under normal conditions of use and handling, this product is not expected to create any health or safety hazards.

Accidental thermal decomposition or melting state can present hazards.

#### 3.1.3. First-aid measures

Undernormal condition ;
Inhalation
Skin contact
Eyes contact

Ingestion.....

No specific measure to be taken No specific measure to be taken No specific measure to be taken No specific measure to be taken

:

#### 3.1.4. Fire fighting measures

1. Suitable extinguishing media;

Water spray, dry chemical or CO2 extinguisher. No special procedures are expected to be necessary for this product. Normal fire fighting procedures should be followed to avoid inhalation of smoke and gases

- 2. Extinguishingmedia not to be used...... None
- **3.** Special exposure hazards ...... For flammable and toxic fumes as well as skin contact with molten materials see § 10
- 4. Special protective clothing for fire-fighter ...... None. It is recommended that fire-

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fighters should wear full protective clothing including self contained breathing apparatus.

#### 3.1.5. Accidental release measures

Personal Precautions: Avoid dust formation. Forms slippery surface.

#### 3.1.6. Handling and storage

Keep in a dry and closed area with the original packing. The packages have to be handled so that they can not break and to be arranged as to prevent them from falling. The goods shall be handled with good industrial hygiene and safety practice.

#### 3.1.7. Exposure controls / personal protection

No specific measures. Handle in accordance with good industrial hygiene and safety practice. Use of safety glasses and face mask is recommended if dust is formed during application.

#### 3.1.8. Physical and chemical properties

Aspect	Solid, in rolls or sheets
Appearance (the colour of the product as supplied)	Normally white if not a specific color
is mentioned.	
Odour	Practically odorless
Ph	Not applicable
Boiling point/boiling range	Not applicable
Melting point/melting range	
Decomposition temperature	>260°C (500°F)
Flash point	
Flammability	Not easily flammable
Explosive properties	Not applicable
Oxidizing properties	Not applicable
Vapourpressure	Not applicable
Static electricity	
accumulate static electricity, (i.e. by rubbingor friction)	· ·
Solubility	Mater insoluble - fat insoluble
Partition coefficient	

#### 3.1.9. Stability and reactivity

The product is stable at room temperatures and does not decompose or self react when handled and stored under prescribed conditions. Toxic fumes can be generated under thermal decomposition.

#### **3.1.10.** Toxicological information

No toxic reaction known under normal conditions. Particularly, no case of coetaneous sensitisation or of mutagenic / carcinogenic activity is known. Underdecomposition conditions, toxic fumes and contaminated water.

#### **3.1.11. Ecological information**

For transportation, storage and normal use no toxicological effect known. The fabric will not degrade biologically in short term.

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#### **3.1.12.** Disposal considerations

As non hazardous solid waste, depending on local registration, nonwovens can be disposed of through recycling, landfill.

#### **3.1.13.** Transport information

Not classified as dangerous for transport.

#### 3.1.14. Regulatory information

Not classified as dangerous in compliance with Turkey and European regulation regarding classifying, packaging and labeling of hazardous substances and products.

#### **3.2.** Technical Data Sheet and Certficate

Produce : P	olypeopylana				
Product Description	ENDLESS FILAMENTS I	PUNBOND, THERMALLY B	ONDED.		
Raw Material	1 100 % PP				
Application on Fabric	SB HYDROPHOBIC				
Treatment	3				
Fabric Colour	WHITE				
Customer Name	11				
Weight	25 GSM				
Width					
	1				
Packing	: PE BAG WITH LABEL		1		
PROPERTIES	TEST METHO	D UNIT	TARGET		
WEIGHT	NWSP 130.1.R0	(15) gam	25		
THICKNESS	NWSP 120.1.R0	(15) mm	0,28		
TENSILE STRENGTH	MD NWSP 110.4.R0 (	(15) N/3 am	55,0		
	CD	1.2	25,0		
ELONGATION AT BREAK	MD NWSP 110.4.R0	(15) %	118,0		
Tolerances For The Avarage Results	- 10	V.			
Weight ± 5 %   Thickness ± 10 %   Tessile Strenght ± 15 %   Elongation ± 15 %   Hydrostatic Head ± 15 %   Liquid Strike-Through Time ± 0,5 %   Air Permeability ± 20 %   Absorption ± 20 %	Width : Up to 150 cm in w Splice : Maxium five splice	Roll Tolerance Length : - 0 / +3% against target / ordered lenght Width : Up to 150 cm in width = -0mm+5mm Over 150 cm in width = - 0mm Splice : Maxium five splices per soll			
The product is wound onto cardboard cores and	then wrapped in polyethylen film. Bar code lab label is applied to each roll. Suitable clasd rolls QUALITY CO				
01.04.2020					

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#### 4. PERFORMANCE REQUIREMENTS OF FINISHED PRODUCTS

We declare our products comply with EN 14683:2019+AC:2019 as TYPE IIR

Parameters	Units	Method	Results	Test Results
BFE (Filtration)	%	Internal method based on EN 14683:2019+AC :2019	≥98	% 98,97 (Eurolab-2020170631)
Differencial pressure (Breathability)	Pa/cm2	Internal method based on EN 14683:2019+AC: 2019	<40	21 (Eurolab-2020170631)
Microbial cleanliness / bioburden	UFC/g	ISO 11737-1:2018	≤30	21 (Eurolab-2020170631)
Splash resistance pressure	kPa	ISO 22609	≥16	18 (Eurolab-2020170631)
Biocompatibility		ISO 10993-1	Suitable for skin Cytotoxicity, Irritation, Sensitisization	Cytotoxicity: It is not cytotoxicity. (Oxigen-2020-C-1099)

#### 5. INSTRUCTIONS FOR USE

#### 5.1.Intended Use:

Surgical mask (facial mask for medical use) is intended to be worn by medical personnel during surgical or other medical procedures to protect both the patient and the operating personnel and any other person that want and need to be protected, from transfer of microorganisms, body fluid, particulate material transfer and any other microbes.

Reduces exposure to blood and body fluids. Minimizes contamination to exhaled microorganisms. This product is intended for use in infection control practices.

#### 5.2. Technical Specifications:

Non-irritating, Fluid Resistant, Three Ply construction.

3 pleats of folds to allow the user to expand the mask so it covers the area from the nose to the chin. Mask is secured with an ear loop to be placed behind the ears.

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#### The surgical mask's (facial mask for medical use) three-ply layers work as follows:

- <u>The outer layer</u> repels water, blood, and other body fluids.
- <u>The middle laver</u> filters certain pathogens.
- <u>The inner laver</u> absorbs moisture and sweat from exhaled air.

#### 5.3. Donning The Mask:

- Before putting on the mask, wash your hands for at least 20 seconds with soap and water, or rub your hands together thoroughly with alcohol-based hand sanitizer.
- Check for defects in the face mask, such as tears or broken loops.
- Position the colored side of the mask outward.
- If present, make sure the metallic strip is at the top of the mask and positioned against the bridge of your nose.
- Ear loops: Hold the mask by both ear loops and place one loop over each ear.
- Mold the bendable metallic upper strip to the shape of your nose by pinching and pressing down on it with your fingers.
- Pull the bottom of the mask over your mouth and chin.
- Be sure the mask fits snugly.
- Don't touch the mask once in position.
- If the mask gets soiled or damp, replace it with a new one.

#### <u>!! Do not:</u>

- touch the mask once it's secured on your face, as it might have pathogens on it
- dangle the mask from one ear
- hang the mask around your neck
- reuse single-use masks.

If you have to touch the face mask while you're wearing it, wash your hands first. Be sure to also wash your hands afterward, or use hand sanitizer.

#### 5.4. Doffing The Mask:

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- Before you take off the mask, wash your hands well or use hand sanitizer.
- Avoid touching the mask itself, as it could be contaminated. Hold it by the loops, ties, or bands only.
- Carefully remove the mask from your face once you: unhook both ear loops.
- Holding the mask loops discard the mask by placing it in a covered trash bin.
- After removing the mask, wash your hands thoroughly or use hand sanitizer.

#### 6. FIRE FIGHTING MEASURES :

#### Suitable Fire Extinguishers and Methods:

Water spray, foam, carbon dioxide or dry chemicals. A sudden intervention should be made to the fire exit without any possible danger. If the material is melted, do not apply direct water flow. Use fine water spray or foam.

#### 7. DISPOSAL CONSIDERATIONS :

Dispose of according to the Regulation on Control of Hazardous Wastes.

#### 8. USE AREAS

:

Hospitals, medical companies, doctor offices, laboratories, food manufacturers, cleaning companies and work places where the hygneic areas are necessary.

:

#### 9. SHELF LIFE

: 5 Years

#### **10. SYMBOLS**

$\sim$	Production Date	CE	Shows the conformity to the European standards for the self-declared Class I products
لس	Manufacturer	Ť	Keep Dry
$\Sigma$	Expiration Date	*	Keep out of sunlight
LOT	Lot Number	NON	Non-Sterile
REF	Referance Number	$\otimes$	Do not use again

:

#### **11. STORAGE**

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Capable of being stored continuously in ambient temperature of 10 to 30 deg C and relative

humidity of 15 to 55%. Capable of operating continuously in ambient temperature of 10 to 30 deg C and relative humidity of 15 to 55%.

It is recommended that surgical face masks (facial mask for medical use )should be stored in their original containers and should be stored away from direct sunlight, heat sources and liquids, including chemicals. The area should be clean and should protect the masks from contamination. Never store it in a purse or pocket.

:

#### **12. SAFETY INFORMATION**

- Pay attention to the warnings.
- It is not sterile.
- It is for single use only.
- Do not use if the package is damaged.
- Do not use the product after expiration date.

#### 13. PACKAGING



#### MY TİCARET VE MEDİKAL A.Ş.



TEST / INSPECTION REPORT EUROLAB LABORATORY SERVICES TÜRCERT TEKNİK KONTROL VE BELGELENDİRME A.Ş.



Report No: Applicant:

Contact Person: Contact Telephone: Contact e-mail: Sample Accepted on: Report Date: Total number of pages: 2020170631 **MY TİCARET VE MEDİKAL A.Ş.** Ömerli mah. General Şükrü Koraltı cad. No:33 Arnavutköy/ İstanbul Z. Melek ÖZ BOLAT 0212 438 2064 <u>info@mymedikal.com.tr</u> / kalite@mymedikal.com.tr 10.06.2020 17.06.2020 9 (Pg)

Sample ID:

Surgical Mask

	TEST	METHOD	Specimen	RESULT
*	Medical and surgical face masks -	EN 14683+AC 2019	Surgical Mack	PASS
	Requirements and test methods	EN 14683+AC 2019	Surgical Mask	TYPE IIR



Seal

Customer Representative Hasan KUTLU

TÜRCER

Laboratory Manager Hava SARIAYDIN

PR33-F01/08.10.2015/Rev:17.01.2017-R01

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Environment

The requirements and standards apply to equipment intended for use in

X	Residential (domestic) environment			
X	Commercial and light-industrial environment			
X	Industrial environment			
X	Medical environment			





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#### Requirements and test methods

This European Standard specifies construction, design, performance requirements and test methods for medical face masks intended to limit the transmission of infective agents from staff to patients during surgical procedures and other medical settings with similar requirements. A medical face mask with an appropriate microbial barrier can also be effective in reducing the emission of infective agents from the nose and mouth of an asymptomatic carrier or a patient with clinical symptoms.

#### General

All tests shall be carried out on finished products or samples cut from finished products, if applicable in their sterile state.

#### Method for in-vitro determination of bacterial filtration efficiency (BFE)

#### Principle

A specimen of the mask material is clamped between a six-stage cascade impactor and an aerosol chamber. An aerosol of Staphylococcus aureus is introduced into the aerosol chamber and drawn through the mask material and the impactor under vacuum. The bacterial filtration efficiency of the mask is given by the number of colony forming units passing through the medical face mask material expressed as a percentage of the number of colony forming units present in the challenge aerosol.

#### **Reagents and materials**

#### General

Describe commercially available solutions of tryptic soy agar and tryptic soy broth. Other variants may be suitable.

#### **Tryptic soy agar**

Formula/liter:	
Enzymatic digest of casein	15 g
Enzymatic digest of soybean meal	5 g
Sodium chloride	5 g
Agar	15 g
Final pH	7,3 ± 0,2 at 25 °C





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#### Tryptic soy broth

Formula/liter:	
Enzymatic digest of casein	17 g
Enzymatic digest of soybean meal	3 g
Sodium chloride	5 g
Dextrose	2,5 g
Final pH	7,3 ± 0,2 at 25 °C

#### Peptone Water

Formula/liter:	
Peptone	1 g
Sodium chloride	5 g
Final pH	7,3 ± 0,2 at 25 °C

#### Preparation of bacterial challenge

Staphylococcus aureus shall be inoculated into 30 ml tryptic soy broth in an Erlenmeyer flask and incubated with mild shaking at a temperature of  $(37 \pm 2)$  °C for  $(24 \pm 2)$  h. The culture shall then be diluted in peptone water to give a concentration of approximately 5 × 105 cfu/ml.

The bacterial challenge shall be maintained at (2 200  $\pm$  500) cfu per test. The bacterial challenge shall be determined on the basis of experience and previous positive control plates (see B.6.3) and the dilution of the challenge suspension adjusted accordingly. The mean particle size in the bacterial challenge shall be maintained at (3,0  $\pm$  0,3) µm (see B.6.9).

#### **Procedure**

Assemble the apparatus in accordance with the flow chart shown in Figure B.1.

Deliver the bacterial challenge to the nebulizer using the peristaltic or syringe pump.

Perform a positive control run without a test specimen. Initiate the bacterial challenge by turning on the vacuum pump and adjust the flow rate through the cascade impactor to 28,3 l/min. Deliver the bacterial challenge for 1 min. Maintain the airflow through the impactor for 2 min. Then remove the plates from the impactor. Ensure that each plate is numbered to indicate its position in the impactor.

Place fresh plates in the impactor, fix a test specimen in place and repeat the above procedure.

Repeat this procedure for each test specimen.

After the last test specimen has been tested, perform a further positive control run.

Perform a negative control run by passing air, without addition of the bacterial challenge, through the cascade impactor for 2 min.

Incubate all the plates at  $(37 \pm 2)$  °C for  $(48 \pm 4)$  h.





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For each specimen and control run, count the number of colonies on each plate and add up the counts to give the total number of cfu collected by the impactor using the "positive hole" conversion table1) in accordance with the instructions of the cascade impactor manufacturer. For the two positive control runs, take the mean of the two totals. From the positive control plates calculate the mean particle size of the bacterial challenge aerosol using the "positive hole" conversion table in accordance with the instructions of the cascade impactor manufacturer.

#### **Calculation of bacterial filtration efficiency**

For each test specimen calculate the bacterial filtration efficiency B, as a percentage, using the following formula:

$$B = (C - T) / C \times 100$$

Where;

C is the mean of the total plate counts for the two positive control runs;

T is the total plate count for the test specimen.

#### Method for determination of breathability (differential pressure)

#### Principle

A device which measures the differential pressure required to draw air through a measured surface area at a constant air flow rate is used to measure the air exchange pressure of the medical face mask material, as shown in Figure 1. Water-filled manometers (M1 and M2) are used to measure the differential pressure. A flow meter is used for measurement of the airflow. An electric vacuum pump draws air through the apparatus and a needle valve is used to adjust the airflow rate.



Key 1 air inlet 2 flow meter 3 manometer M1 4 filter material

5 manometer M2 6 valve 7 vacuum pump

#### Figure 1 — Apparatus for measuring air resistance



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#### Procedure

The test specimen is placed across the 2,5 cm diameter orifice (total area 4,9 cm2) and clamped into place so as to minimise air leaks and that the tested area of the specimen will be in line and across the flow of air.

The pump is started and the flow of air adjusted to 8 l/min.

The manometers M1 and M2 are read and recorded.

The procedure described in steps 1 through 3 is carried out on 5 (or appropriate number of) different areas of the mask and the readings averaged.

#### **Calculation of differential pressure**

For each test specimen calculate the differential pressure  $\Delta P$  as follows:

$$\Delta P = (Xm1 - Xm2)/4,9$$

Where;

Xm1 is pressure in Pa, manometer M1, mean of 5 test areas, low pressure side of the material;

Xm2 is pressure in Pa, manometer M2, mean of 5 test areas, high pressure side of the material;

4,9 is the cm2 area of the test material;

 $\Delta P$  is the differential pressure per cm2 of test material expressed in Pa.

#### Splash resistance

When tested in accordance with ISO 22609 the resistance of the medical face mask to penetration of splashes of liquid shall conform to the minimum value given for Type IIR in Table 1.

#### **Microbial cleanliness (Bioburden)**

When tested according to EN ISO 11737-1 the bioburden of the medical mask shall be  $\leq$  30 cfu/g tested (see Table 1).

To determine the mask's bioburden according to EN ISO 11737-1, follow the procedure below:

The number of masks that shall be tested is minimum 5 (five), but can be greater if necessary to allow for an AQL of 4 %.

Weigh each mask prior testing. The full mask is aseptically removed from the packaging and placed in a sterile 500 ml bottle containing 300 ml of extraction liquid (1 g/l Peptone, 5 g/l NaCl & 2 g/l polysorbate surfactant 20 [e.g. Tween 20, Alkest TW 20]).

The bottle is laid down on an orbital shaker and shaken for 5 min at 250 rpm. After this extraction step, 100 ml of the extraction liquid is filtered through a 0,45  $\mu$  filter and laid down on a TSA plate for the total viable aerobic microbial count. Another 100 ml aliquot of the same extraction liquid is filtered in the same way and the filter plated on Sabouraud Dextrose agar (SDA) with chloramphenicol for fungi enumeration. The plates are incubated for 3 days at 30 °C and 7 days at (20 – 25) °C for TSA and SDA plates respectively.

The total bioburden is expressed by addition of the TSA and SDA counts.

In the report, indicate the total bioburden per mask and based on the mask weigh, the total bioburden per gram tested.





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TÜRCERT TEKNİK KONTROL VE BELGELENDİRME A.Ş.



#### **TEST REQUIREMENTS**

Test	Type I <sup>a</sup>	Type II	Type IIR
Bacterial filtration efficiency (BFE), (%)	≥ 95	≥ 98	≥ 98
Differential pressure (Pa/cm2)	< 40	< 40	< 60
Splash resistance pressure (kPa)	Not required	Not required	≥ 16,0
Microbial cleanliness (cfu/g)	≤ 30	≤ 30	≤ 30

<sup>a</sup> Type I medical face masks should only be used for patients and other persons to reduce the risk of spread of infections particularly in epidemic or pandemic situations. Type I masks are not intended for use by healthcare professionals in an operating room or in other medical settings with similar requirements.





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#### TEST RESULTS

#### EN 14683 Inspection

#### **SAMPLE : SURGICAL MASK**

Test	Туре		Result		Evaluation	
				98,86		
				99,01		
Bacterial filtration efficiency 1 (BFE), (%) ≥ 95		2 ≥98	3 ≥98	98,92	98.97	PASS
			99,03			
	99,04					
Differential pressure (Pa/cm2)	< 40	<40	<60	21		PASS
Splash resistance pressure (kPa)	N/A	N/A	≥16,0	18		Type IIR
Microbial cleanliness (cfu/g)		≤ 30		21		PASS



Free Area

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#### MASK IMAGES UNDER TEST



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



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	OXIGEN ANALİZ ÖZEL KON Çakmaklı Mah. Hadımköy B No:57 K:1 D:8 34500 Büy TÜRK TÜRK AKREDİTAS Tarafından Akred MUAYENE VE AN	Bağlantı Yolu Ufuk Plaza ükçekmece/İSTANBUL <b>AK</b> YON KURUMU lite Edilmiştir.	Test   Test   TS EN ISO/IECT 17025   AB-0953-T   AB-0953-T   2020-C-1099   06-2020
Report Number	: 2020-C-1099	Date of Report	:05/06/2020
Purpose of Analysis	: Cytotoxicity Test		
Costumer name/addres	: MY Ticaret ve Medi No:33 / ISTANBUL	kal. A.S. / Ömerli Mah. Genral S	ükrü Koralti Cad.
Name andidentity of test item	: Surgical Mask		
Code of Sample	: Lot: SD20200310		
Package of Sample/Quantity	: 3 piece		
Date of receipt of test item	: 28/05/2020		
Date of Test/End of test	: 29/05/2020 - 05/06/	2020	
Number of pages	: 5		

Analysis	Unit	Result	Limit Of Measurement	Recovery	Uncertainity of Meas.	Analysis Metod	Com.
1-*InvitroCytotoxicity Test		it is not Cytotoxicity				TS EN ISO 10993- 5((Biologicalevaluation in medicaldevicesPart 5: Test for in vitrocytotoxicity TS EN ISO 10993-12 (Biologicalevaluation in medicaldevicesPart 12: Test samplepreparationand Reference Materials	А

Explanation:

1. Experiment environment

CELL LINE:L929 (Mouse Fibroblast cell)

CultureMedium : DMEM+ L-Glutamin Fetal Bovine Serum

Penisilin-Streptomisin

Blank :Sterile cell culture medium

NEGATIVE CONTROL: Polietilen Kryo Tüp + Cell

POSITIVE CONTROL:Natural RubberLatex+ Cell



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:05/06/2020

#### 2.METHOD OF APPLICATION

Extraction was performed according to TS EN ISO 10993-12 standard. The samples were placed in a waterbath at a rate of 50 rpm at 37°C for 24 hours in a 10% serum-containing cellculture medium of the size specified in the standard. The extraction was then terminated and the extract obtained was used within 24 hours.

#### **3.ANALYSIS METHOD**

#### Qualitative Evaluation:

Cells were expected to become confluent by sowing 6 well plates.

Subsequently, the 37°C 5% CO2 sample was exposed to negative, positive control and sample extracts for 24 hours. After incubation, cells were microscopically examined ande valuated according to TS EN ISO 10993-5 standard.

#### **Quantitative Evaluation:**

In the study, it was applied according to the "TS EN ISO 10993-5 / XTT Cytotoxicity Experiment" standard. The 96-well plate was counted as 100 / well and the cultured cells were incubated for 24 hours to provide 80% confluency. Subsequently, the cells were exposed to 1/1 - dilutions of the sample extract for 4 hours.

At the end of the process, 1 mg / mL XTT was added to the wells and the plates were incubated for 3 hours at 37 ° C in 5% CO2. The assay was terminated by the addition of isopropyl alcohol to the wells and the% viability values were calculated by measuring the color change in the plates (570-650 nm) spectrophotometer.

#### 4. TEST RESULTS

#### **Qualitative Evaluation:**

The qualitative evaluation was made according to Table 1 in TS EN ISO 10993-5 standard.

Must No.	Test Material	Reaction	Situations of Cultures
1	Negative Control	0	Discreteendoluminalgranules, celldisruptionno, nodecrease in cellproliferation
2	Positive Control	4	Nearlyallcelllayers have been destroyed
3	Sample	0	Discreteintraoplasmagranules, no cell destruction, no decrease in cell proliferation



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MUAYENE VE ANALİZ RAPORU



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#### **Quantitative Evaluation:**

(TS EN ISO 10993-5 / XTT Cytotoxicity Test)

#### Table 2. XTT Test results

DILU	TION RATIO	S					
TEST NUMBER	100%	75%	50%	25%			
1. AGAIN	0,963	1,111	1,245	1,345			
2. AGAIN	0,914	1,120	1,216	1,337			
3. AGAIN	0,946	1,114	1,224	1,359			
AVERAGE	0,941	1,115	1,228	1,337			
POSITIVE CONTROL	100%	75%	50%	25%			
1. AGAIN	0,104	0,206	0,321	0,426			
2. AGAIN	0,106	0,208	0,314	0,441			
3. AGAIN	0,108	0,201	0,325	0,405			
AVERAGE	0,106	0,205	0,320	0,424			
Negative Control(%100)	1.Again	2.Again	3.A	gain			
%100 Ekstrakt	1,109	1,111	1,1	L12			
AVERAGE		1,11					
	A2	A3	A4	A5	A6	A7	
Blank	0,888	0,990	0,999	0,996	1,010	1,002	
	H2	H3	H4	H5	H6	H7	
	0,991	0,992	0,994	0,999	1,080	1,099	
AVERAGE			1,00	13			

Viab.%=100 X OD450e/OD450b

OD450e : % 100 optical density of the sample extract

OD450b : Average value of optical density of blank



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Test SampleViab.% : % 94 PozitiveControlViab.% :% 11 Negative ControlViab.% : %111

#### **REVIEWS:**

**1.**The test was carried out in accordance with the standard "TS EN ISO 10993-5 Biologicalevaluation of medicaldevices-Part 5: extracorporealcytotoxicitytests".

2.The effect of the extracts on the cells for qualitative evaluation was examined microscopically andevaluated by the qualitative morphological grading of the cytotoxicity of the extracts given in the standard "Table 1. Accordingly, the negative control showed no toxic effect on the cells (0), and the positive control showed toxicity as high as expected (4). Since the cytotoxic effect of the sample extracts was not toxic when examined, it was evaluated as (0). According to the standard used, as indicated in table 1, the presence of a larger rating value of (2) is considered a cytotoxic effect.

**3.**The "TS EN ISO 10993-5 / XTT Cytotoxicity Experiment" wasused as the quantitative evaluation method and the obtained results (Table 2) were evaluated statistically. Results from the negative and positive controls used and test validity criteria are met.

In this experiment, the effects of 1/1 dilutions of sample extract on cells were examined; The complete dilution of extractfromthesample (1/1) and viability was **94%**.

According to the standard used, this value is lessthan 70%, indicating that there is nocytotoxic effect on the sample extracts since there is a cytotoxicity indicator.



Çakmaklı Mah. Hadımköy Bağlantı Yolu Ufuk Plaza No:57 K:1 D:8 34500 Büyükçekmece/İSTANBUL TÜRKAK

#### TÜRK AKREDİTASYON KURUMU

Tarafından Akredite Edilmiştir.

MUAYENE VE ANALİZ RAPORU



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Chart1.Qualitative morphological grading of cytotoxicity of extracts

Degree	Reaction	Situations of Cultures
0	No	Discreteintraoplasma granules, no cell destruction, no decrease in cell proliferation
1	Very little	There are more than 20% of cells that are not round, poorly adherent, and contain few or no intracellular granules, or morphologicallyaltered, rarely destroyed cells, only slight growth inhibition can be observed
2	Light	Round cell number is less than 50%, nointraplosiongranules, observable cell inhibition is not more than 50%
3	Middle	The number of cells rounded or destroyed is not more than 70%, the cell layers are not completely degraded, the observable cell inhibition is more than 50%
4	Severe	Nearly all cell layers have been destroyed

Approved by 05/06/2020 Mehmet Nur ERAT Laboratory Manage

JVAR HIZ. TIC. I

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D. ŞTİ

LABO

Mah. H

(\*) Analysis method is in scope of acreditation.

Evaluation:

The abovementioned values were determined as the result of the inspection and analysis.

1.No part of thisanalytical report can be used alone or separately. Unsigned and unsealed reports are defund.

2. Analysis results are valid for the above sample

3. When necessary, "MeasurementUncertainty" and "Recover" informationaregiventogetherwith the analysis results

4. Judicial and administrative procedures to be used for advertising purposes. It can not be partially reproduced and published without permission

Abbreviations: N.A: Not Detected A:Appropriate IA: Inappropriate AF: AssessmentFailedEVL :Evaluation

Çel Microbiology Unit Responsible Havva Lamia Demir (v)

TA

Responsible of theDepartment of SampleAdmission

Nilsun AŞÇI



Türk Akreditasyon Kurumu (TURKAK) deney raporlarının tanınması konusunda Avrupa Akreditasyon Birliği (EA) ve Uluslararası Laboratuvar Akreditasyon Birliği (ILAC) ile karşılıklı tanınma antlaşmasını imzalamıştır.

Deney laboratuvarı olarak faaliyet gösteren EKOTEKS LABORATUVAR ve GÖZETİM HİZMETLERİ A.Ş. TÜRKAK'tan AB-0583-T akreditasyon dosya numarası ile ISO 17025:2017 standardına göre akredite edilmiştir.

Deney ve/ veya ölçüm sonuçları, genişletilmiş ölçüm belirsizlikleri (olması halinde) ve deney metodları bu sertifikanın tamamlayıcı kısmı olan takip eden sayfalarda verilmiştir.

TEDB Head of Testing Laboratory Date Customer 18.06.2020 Özlen Sevim A. RAZAK EKOTEKS

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	AB-0583-T
	20018616
	06-20

İSTENEN TESTLER	SONUÇ	AÇIKLAMA
FİZİKSEL ÖZELLİK TESTLERİ		
Malzeme Tayini	-	

İstenen değerler müşteri tarafından belirtilmemiştir. NOT: Aksi belirtilmediği taktirde testler ile ilgili kayıtlar 5 yıl, orjinal numuneler 3 ay saklanır. Müşteri tarafından talep edildiğinde, testlere ait ölçüm belirsizliği raporlanır fakat "Geçer/Kalır" değerlendirmesinde ölçüm belirsizliği değeri dikkate alınmaz. Raporlanan belirsizlik, genişletilmiş belirsizlik olup standart belirsizlik kapsam faktörü k=2 kullanılarak elde edilmiştir. Güvenilirlik düzeyi % 95'tir. Bu raporda (\*) işaretli deneyler akreditasyon kapsamına dahil değildir.



Bu rapor, laboratuvarın yazılı izni olmadan kısmen kopyalanıp çoğaltılamaz. İmzasız ve mühürsüz raporlar geçersizdir.

AB-0583-T
20018616
06-20

# **TEST SONUÇLARI**

MALZEME TAYİNİ: EKOTEKS 40 FT-IR. Spektrometre test cihazı.

> SONUC Poliüretan

<u>istenen</u>

Not: Bu test sonucu FT-IR spektrometre yöntemi ile Poliüretan referans malzemesi ile karşılaştırılarak tespit edilmiştir. Referans test numunesine benzerliği % 73 bulunmuştur.

Not: Lateks içermemektedir.



AB-0583-T	and the second se
20018616- ing	
06-20	

REQUIRED TESTS	RESULT	COMMENTS
PHYSICAL PROPERTIES TESTS		
Determination of Material	-	

#### No requirement was given.

REMARK: Original samples are kept for 3 months and all technical records are kept for 5 years unless otherwise specified. If requested, measurement uncertainty will be reported. But unless otherwise specified, measurement uncertainty is not considered while stating compliance with specification or limit values The reported uncertainty is based on a standard uncertainty multiplied by a coverage factor k=2, providing a level of confidence of approximately 95 %. Tests marked (\*) in this report are not included in the accreditation schedule.



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## **TEST RESULTS**

## **DETERMINATION OF MATERIAL: EKOTEKS 40**

FT-IR. Spectrophotometer Test Machine.

RESULT Polyurethane

#### REQUIREMENT

Note: The test result was identified as Polyurethane using by FT-IR spectrometer method which is based on to compare with the reference material. The similarity of the test sample to reference is %73 was found.

Note: Latex does not contains.