

☎: 0751- 2341960, 2343972  
2390160, 2390211  
Fax: 0751-2341148  
E-Mail: director@drde.drdo.in



भारत सरकार, रक्षा मंत्रालय  
Govt. of India, Ministry of Defence  
रक्षा अनुसंधान एवं विकास स्थापना (डी.आर.डी.ई.)  
Defence R&D Establishment (DRDE)  
झांसी मार्ग, ग्वालियर - 474002 (म.प्र.)  
Jhansi Road, Gwalior- 474 002 (M.P.)

No. DRDE/MASK/2020

By email

Date: 07 August 2020

To  
M/s Livsafe Products (P) Ltd.  
G-22, Panki Industrial Estate, Site-III, Kanpur-208022  
e-mail: htcms06@gmail.com

Sub: Test report of N95 mask without exhalation valve (GSM of total 5 layers: 175 GSM)

Ref: Your letter No. Nil dated 21 July 2020.

With reference to the above, kindly find enclosed herewith the test reports of the mask samples submitted by you for testing at DRDE, Gwalior.

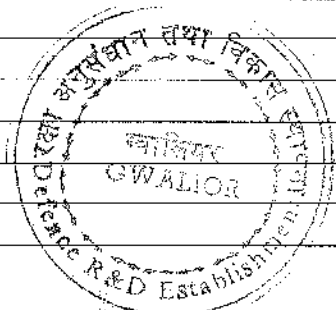
Dr. M. Boopathi  
Scientist F  
For Director

Encl: As above (Two pages)

07/08/2020



Test Report No DRDE/MASK/1719  
 Date : 07 August 2020  
 Defence Research and Development Establishment (DRDE),  
 Govt. of India, Ministry of Defence  
 Jhansi Road, Gwalior-474002  
 Phone : 0751-2341550, Fax : 0751-2341148  
 Email : director@drde.drdo.in



Manufacturer / Developer	M/s Livsafe Products (P) Ltd., G-22, Panki Industrial Estate, Site-III, Kanpur-208022
Letter No. & date	Nil & 24 July 2020
Manufacturer's code if any	GSM of total 5 layers: 175 GSM
Category of Masks submitted	N95 without exhalation valve
DRDE sample code	PD-1719
Date of receipt of sample	31 July 2020
Period of testing	31 July 2020 – 07 August 2020
Remarks (if any)	Nil

**Test Results**

**1. Particulates Filtration Efficiency (PFE) for mask without exhalation valve.**

Test Method	Test Conditions	Results		Remarks
		Specified	Observed	
NaCl aerosol with laser based measurement	As received	≥ 95 %	95.99 %	Meets the requirement as specified.
	Conditioned for 24 hrs at +70±3 °C		97.35 %	
	Conditioned for 24 hrs at -30±3 °C		98.22 %	

**2. Breathing (Inhalation) Resistance (BIR) for mask without exhalation valve.**

Test Method	Test Conditions	Results		Remarks
		Specified	Observed	
IS 9473:2002	As received	FFP2: 2.4 mbar (max) FFP3: 3.0 mbar (max)	0.90 mbar	Meets the requirement as specified.
	Conditioned for 24 hrs at +70±3° C		0.83 mbar	
	Conditioned for 24 hrs at -30±3° C		0.92 mbar	



**3. Breathing (Exhalation) Resistance for mask without exhalation valve.**

Test Method	Test Conditions	Results		Remarks
		Specified	Observed	
IS 9473:2002	As received	FFP2: 3.0 mbar (max) FFP3: 3.0 mbar (max)	2.2 mbar	Meets the requirement as specified.
	Conditioned for 24 hrs at +70±3° C		2.3 mbar	
	Conditioned for 24 hrs at -30±3° C		2.3 mbar	

**4. Flammability (FLM) for mask without exhalation valve.**

Test Method	Test Conditions	Results		Remarks
		Specified	Observed	
IS 9473:2002	As received	Sample should not burn	Did not burn	Meets the requirement as specified.
	Conditioned for 24 hrs at +70±3° C		Did not burn	
	Conditioned for 24 hrs at -30±3° C		Did not burn	

**5. Splash Resistance (SPR) for mask without exhalation valve.**

Test Method	Test Conditions (Pressure)	Specified	Results		Remarks
			Target area of specimen	Observed	
ASTM F 1862/F1862M-17	80 mmHg	No penetration	(a) Left Side (b) Right Side (c) Middle	(a) No Penetration (b) No Penetration (c) No Penetration	Meets the requirement as specified.
	120 mmHg		(a) Left Side (b) Right Side (c) Middle	(a) No Penetration (b) No Penetration (c) No Penetration	Meets the requirement as specified.
	160 mmHg		(a) Left Side (b) Right Side (c) Middle	(a) No Penetration (b) No Penetration (c) No Penetration	Meets the requirement as specified.

Note:

- The test results shall not be treated as an endorsement/Certification of the product. The DRDE/DRDO Logo or "Approved by DRDE/DRDO" cannot be used on product or any promotional document or otherwise.
- The test results are valid for the samples tested and the documented test conditions.
- The test report shall not to be published in any form without the written approval of the Director, DRDE in case of Commercial Testing Samples.
- Samples are not drawn by the DRDE, Gwalior. The results relate to the sample submitted by the client.
- Test report is meant for guidance and not be used for litigation.
- Remnant Sample storage up to 60 days only.