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Report N° 1172125A01 v3

EFFICACITE VIRUCIDE SUR DEFROISSEURS QR2021D1

30 September 2020

This report supersedes report 1172125A01 version nÁ2 which has to be destroyed. The laboratory absolves itself from the use of any previous report.

For the attention of **Cédric METAY**
GROUPE SEB - CALOR

Quotation 2020/62562 (DSP 765148)
Reference: TESTS ANTI VRUS COMMANDE N° 9324053626 09.06.2020

Tested product

Designation: QR 2021 IXEO POWER
Reference: -
Batch N°: -
Brand: -
ATS reference: 775023

Study followed by Michel LEBREUIL

The copy of this report is only authorized by unabridged edition
This edition includes 9 pages

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SPONSOR	Eurofins ATS France		
	Aix-en-Provence, Pole d'activities Aix-Les-Milles		
	Actimart -1140 Rue Ampere		
	F-13851 Aix –en-Provence Cedex 3		
	FRANCE		
TEST METHOD	Antiviral activity on QR 2021 IXEO POWER according to Sponsor's indications		
TEST ITEM			
PRODUCT NAME (*)	*QR 2021 IXEO POWER*		
MATRIX OF THE PRODUCT (*)	N.A.		
BATCH (*)	N.A.	ATS CODE	775023
MANUFACTURING DATE (*)	N.A.	EXPIRY DATE (*)	N.A.
MANUFACTURER	ROWENTA		
ACTIVE INGREDIENT (*)	N.A.		
MATERIAL ITEM ALIQUOT	LV-MAT-IJE2-20-204-0F89:a		
PARCEL REGISTRATION N.	IP-LV-2020196-AKT	RECEIVING DATE	14-July-2020
STORAGE CONDITIONS (*)	Room temperature (20°C± 5°C)		
(*) INFORMATION PROVIDED BY THE SPONSOR			
ANALYSIS STARTING DATE	20-August-2020	**ANALYSIS ENDING DATE**	26-August-2020
EXPERIMENTAL CONDITIONS			
SUMMARY	This study has been conducted in order to evaluate the antiviral activity (expressed in $LogTCID_{50}$ reduction value) of QR 2021 IXEO POWER on contaminated fabric, compared to virus control (recovery after drying), following the Sponsor's ironing procedure and according to Sponsor's requirements. For this purpose, the following virus has been used: *Murine norovirus (MNV, strain S99)* RVB-651 For this virus, 9 unfinished 100% cotton swatches (2x5 cm each) have been inoculated with 0,05 ml of viral suspension (as per EN 16777:2018 / UNI EN 16777:2019). - 3 swatches have been inoculated and immediately the viable viral particles have been recovered in order to verify the recovery method from swatches.		

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	- 3 swatches have been inoculated and left in an opened petri dish on surface of a Biohazard hood until visible dry; then, immediately after drying, the viable viral particles have been recovered in order to verify the recovery after drying from swatches. - 3 swatches have been inoculated and left in an opened petri dish on surface of a Biohazard hood until visible dry. Then, they have been put in horizontal position, treated with 6 applications of continuous steam (3 forwards and 3 backwards), spaced by 2 seconds (without steam), at 10 cm/sec remaining in contact with the cotton swatches, according to the Sponsor requirements. Waiting time between each carrier: 1 minute without steam. - The steam generating device was set to "Normal", that is the setting when the appliance is turned on.		
TEST TEMPERATURE	"Normal" on the device (as per Sponsor instructions)		
PRODUCT APPEARANCE	Steam iron		
EXPOSURE SPEED	10 cm/sec		
CARRIERS	2 cm × 5 cm cotton fabric (swatches)		
VIRUS RECOVERY	Iced culture Medium		
INTERFERING SUBSTANCE	No interfering substance		
INCUBATION TEMPERATURE	37°C ± 1°C (with 5% CO_2)		
TEST VIRUS	*Murine norovirus (MNV, strain S99), RVB-651*		
CELL LINES	*RAW 264.7, ATCC TIB-71*		
		Log reductions	**% reduction**
RESULTS	*Murine norovirus, MNV strain S99*	**≥4.33 ±0.080**	**>99.99%**
	See Addendum N.1		
CONCLUSIONS	**QR 2021 IXEO POWER CAUSES a reduction ≥4.33 Log (>99.99%)** against *Murine norovirus, MNV strain S99 RVB-651* with 6 applications of continuous steam (3 forwards and 3 backwards), spaced by 2 seconds (without steam), at 10 cm/sec remaining in contact with the cotton swatches, compared to virus control (recovery after drying). The vapor temperature on the treated surface and the net exposure time are typically the critical parameters of the process. The higher these values, the greater the effectiveness of the process. *Murine norovirus* is a non-enveloped virus, which makes it more resistant to disinfection. The envelope is a structure that has the main function of facilitating the infection of the virus to the host, but which nevertheless makes the virus more sensitive to chemical agents.		

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ADDENDUM	N. 1: RAW DATA ELABORATION (*5 PAGES*)

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Reviewed and electronically signed for Study Technical Supervisor Approval by
Andrea De Bortoli, Employee
for Eurofins Biolab Srl, on 29-Sep-2020 15:46:21 UTC+02:00

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Quantitative non-porous surface test without mechanical action for the evaluation of virucidal activity of chemical disinfectants used in the medical area — Test method and requirements (phase2/step2)

Norma (Standard): EN16777:2018/ UNI EN16777:2019

Data inizio *(Started on)*: 21/08/20

Data fine test (*Test finished on*): 24/08/20

Rapporto No *(Report No)*: STULV20AA3930-1

ID Campione *(ID sample)*: LV-MAT-IJE2-20-204-0F89:a

Titolazione virus *(Virus Titration)*
Murine norovirus (MNV, strain S99) RVB-651

Condizioni testate *(Test condition)*	Replica	K-	Diluizione virus *(Virus dilution)*								K-
			1	2	3	4	5	6	7	8	
Murine norovirus (MNV, strain S99) RVB-651	B	0	4	4	4	4	4	4	0	0	0
	C	0	4	4	4	4	4	0	0	0	0
	D	0	4	4	4	4	4	4	0	0	0
	E	0	4	4	4	4	4	4	0	0	0
	F	0	4	4	4	4	4	4	0	0	0
	G	0	4	4	4	4	4	0	0	0	0
	Endpoint	0.0	100.0	100.0	100.0	100.0	100.0	66.7	0.0	0.0	0.0

Cell destruction: **VALID**

Log TCID50: **6.17** ± **0.400**

Data verifica Approver (*Approver verification date*): 26/08/20

Sigla tecnico *(Technician signature)*: _____ Data *(Date)*: 06.09.20

Sigla Approver *(Approver signature)*: _____ Data *(Date)*: 06/09/20

eurofins	Quantitative non-porous surface test without mechanical action for the evaluation of virucidal activity of chemical disinfectants used in the medical area — Test method and requirements (phase2/step2) Norma (Standard): EN16777:2018/ UNI EN16777:2019	Pagina *(Page)* 2 / 5

Data inizio *(Started on)*: 21/08/20 Data fine test (*Test finished on*): 24/08/20

Rapporto No *(Report No)*: STULV20AA3930-1 ID Campione *(ID sample)*: LV-MAT-IJE2-20-204-0F89:a

Recovery after inoculum from swatches
Dilution in ice-cold medium
Murine norovirus (MNV, strain S99) RVB-651

Carrier 1
Condizioni testate *(Test condition)*

	Replica	K-	Diluizione virus (Virus dilution)								K-
			2.3	3.3	4.3	5.3	6.3	7.3	8.3	9.3	
No interfering substance 0 min	B	0	4	4	4	4	0	0	0	0	0
	C	0	4	4	4	4	4	0	0	0	0
	D	0	4	4	4	4	0	0	0	0	0
	E	0	4	4	4	4	0	0	0	0	0
	F	0	4	4	4	4	4	0	0	0	0
	G	0	4	4	4	4	0	0	0	0	0
	Endpoint	0.0	100.0	100.0	100.0	100.0	33.3	0.0	0.0	0.0	0.0

Cell destruction: **VALID**
Log TCID50: **6.13** ± **0.400**

Carrier 2
Condizioni testate *(Test condition)*

	Replica	K-	Diluizione virus (Virus dilution)								K-
			2.3	3.3	4.3	5.3	6.3	7.3	8.3	9.3	
No interfering substance 0 min	B	0	4	4	4	4	0	0	0	0	0
	C	0	4	4	4	4	4	0	0	0	0
	D	0	4	4	4	4	0	0	0	0	0
	E	0	4	4	4	4	4	0	0	0	0
	F	0	4	4	4	4	0	0	0	0	0
	G	0	4	4	4	4	4	0	0	0	0
	Endpoint	0.0	100.0	100.0	100.0	100.0	50.0	0.0	0.0	0.0	0.0

Cell destruction: **VALID**
Log TCID50: **6.30** ± **0.447**

Carrier 1
Condizioni testate *(Test condition)*

	Replica	K-	Diluizione virus (Virus dilution)								K-
			2.3	3.3	4.3	5.3	6.3	7.3	8.3	9.3	
No interfering substance 0 min	B	0	4	4	4	4	0	0	0	0	0
	C	0	4	4	4	4	0	0	0	0	0
	D	0	4	4	4	4	0	0	0	0	0
	E	0	4	4	4	4	4	0	0	0	0
	F	0	4	4	4	4	0	0	0	0	0
	G	0	4	4	4	4	0	0	0	0	0
	Endpoint	0.0	100.0	100.0	100.0	100.0	16.7	0.0	0.0	0.0	0.0

Cell destruction: **VALID**
Log TCID50: **5.97** ± **0.346**
Log TCID50 (Average): **6.13** ± **0.283**

Data verifica Approver (*Approver verification date*): 26/08/20

Sigla tecnico *(Technician signature)*: _____ Data *(Date)*: 26.08.20

Sigla Approver *(Approver signature)*: _____ Data *(Date)*: 26/08/20

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Data inizio *(Started on)*: 21/08/20 Data fine test (*Test finished on*):

Rapporto No *(Report No)*: STULV20AA3930-1 ID Campione *(ID sample)*: LV-MAT-IJE2-20-204-0F89:a

Recovery after drying from swatches
Dilution in ice-cold medium
Murine norovirus (MNV, strain S99) RVB-651

Carrier 1
Condizioni testate *(Test condition)*

Replica	K-	Diluizione virus (Virus dilution)								K-
		2.3	3.3	4.3	5.3	6.3	7.3	8.3	9.3	
B	0	4	4	4	4	0	0	0	0	0
C	0	4	4	4	4	0	0	0	0	0
D	0	4	4	4	4	0	0	0	0	0
E	0	4	4	4	4	0	0	0	0	0
F	0	4	4	4	4	0	0	0	0	0
G	0	4	4	4	4	0	0	0	0	0
Endpoint	0.0	100.0	100.0	100.0	100.0	0.0	0.0	0.0	0.0	0.0

No interfering substance

Cell destruction: **VALID**
Log TCID50: **5.80** ± **0.000**

Carrier 2
Condizioni testate *(Test condition)*

Replica	K-	Diluizione virus (Virus dilution)								K-
		2.3	3.3	4.3	5.3	6.3	7.3	8.3	9.3	
B	0	4	4	4	4	0	0	0	0	0
C	0	4	4	4	4	0	0	0	0	0
D	0	4	4	4	4	4	0	0	0	0
E	0	4	4	4	4	4	0	0	0	0
F	0	4	4	4	4	4	0	0	0	0
G	0	4	4	4	4	0	0	0	0	0
Endpoint	0.0	100.0	100.0	100.0	100.0	50.0	0.0	0.0	0.0	0.0

No interfering substance

Cell destruction: **VALID**
Log TCID50: **6.30** ± **0.447**

Carrier 1
Condizioni testate *(Test condition)*

Replica	K-	Diluizione virus (Virus dilution)								K-
		2.3	3.3	4.3	5.3	6.3	7.3	8.3	9.3	
B	0	4	4	4	4	0	0	0	0	0
C	0	4	4	4	4	4	0	0	0	0
D	0	4	4	4	4	0	0	0	0	0
E	0	4	4	4	4	4	0	0	0	0
F	0	4	4	4	4	4	0	0	0	0
G	0	4	4	4	4	0	0	0	0	0
Endpoint	0.0	100.0	100.0	100.0	100.0	50.0	0.0	0.0	0.0	0.0

No interfering substance

Cell destruction: **VALID**
Log TCID50: **6.30** ± **0.447**
Log TCID50 (Average): **6.13** ± **0.258**

Data verifica Approver (*Approver verification date*): 26/08/20

Sigla tecnico *(Technician signature)*: _____ Data *(Date)*: 04/09/20

Sigla Approver *(Approver signature)*: _____ Data *(Date)*: 04/09/20

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Data inizio *(Started on)*: 21/08/20 Data fine test (*Test finished on*): 24/08/20

Rapporto No *(Report No)*: STULV20AA3930-1 ID Campione *(ID sample)*: LV-MAT-IJE2-20-204-0F89:a

Procedura test *(Test procedure)*
Dilution in ice-cold medium
Murine norovirus (MNV, strain S99) RVB-651

Carrier 1
Condizioni testate *(Test condition)*

QR 2021 IXEO POWER
N.A.
No interfering substance
10 cm/sec

Replica	K-	Diluizione virus (Virus dilution)								K-
		2.3	3.3	4.3	5.3	6.3	7.3	8.3	9.3	
B	0	0	0	0	0	0	0	0	0	0
C	0	0	0	0	0	0	0	0	0	0
D	0	0	0	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0	0
G	0	0	0	0	0	0	0	0	0	0
Endpoint	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Cell destruction: **VALID**
Log TCID50: ≤ **1.80** ± **0.000**

Carrier 2
Condizioni testate *(Test condition)*

QR 2021 IXEO POWER
N.A.
No interfering substance
10 cm/sec

Replica	K-	Diluizione virus (Virus dilution)								K-
		2.3	3.3	4.3	5.3	6.3	7.3	8.3	9.3	
B	0	0	0	0	0	0	0	0	0	0
C	0	0	0	0	0	0	0	0	0	0
D	0	0	0	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0	0
G	0	0	0	0	0	0	0	0	0	0
Endpoint	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Cell destruction: **VALID**
Log TCID50: ≤ **1.80** ± **0.000**

Carrier 3
Condizioni testate *(Test condition)*

QR 2021 IXEO POWER
N.A.
No interfering substance
10 cm/sec

Replica	K-	Diluizione virus (Virus dilution)								K-
		2.3	3.3	4.3	5.3	6.3	7.3	8.3	9.3	
B	0	0	0	0	0	0	0	0	0	0
C	0	0	0	0	0	0	0	0	0	0
D	0	0	0	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0	0
G	0	0	0	0	0	0	0	0	0	0
Endpoint	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Cell destruction: **VALID**
Log TCID50: ≤ **1.80** ± **0.000**
Log TCID50 (Average): ≤ **1.80** ± **0.000**
Reduction (Average): ≥ **4.33** ± **0.080**

Data verifica Approver (*Approver verification date*): 26/08/20

Sigla tecnico *(Technician signature)*: _____ Data *(Date)*: 04/09/20

Sigla Approver *(Approver signature)*: _____ Data *(Date)*: 04/09/20

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Data inizio *(Started on)*: 21/08/20 Data fine test (*Test finished on*): 24/08/20

Rapporto No *(Report No)*: STULV20AA3930-1 ID Campione *(ID sample)*: LV-MAT-IJE2-20-204-0F89:a

Result summary

Attività virucida *(Virucidal activity)*
Murine norovirus (MNV, strain S99) RVB-651

Prodotto *(Product)*	**QR 2021 IXEO POWER**
Sostanza interferente *(Interfering substance)*	**No interfering substance**
Velocità *(speed)*	10 cm/sec
Concentrazione *(Concentration)*	**Riduzione Log *(Log Reduction)***
N.A.	≥ 4.33 ± 0.08

≥	4.33		±	0.08

Data verifica Approver (*Approver verification date*): 26/08/20

Sigla Approver *(Approver signature)*: A Data *(Date)*: 04/09/20