DIVISIONE: *DIVISION:* **TESTING-CERTIFICAZIONE**

LABORATORIO: *LABORATORY:* **Food**

RAPPORTO DI PROVA
(Test Report)

Pag. 1 di/*of* pag. 6

N° 0400\FPM\FOOD\17_3

Data: *Date:* 11/12/2017

IDENTIFICAZIONE E DESCRIZIONE DEL CAMPIONE:
SPECIMEN DESCRIPTION:

EVALUATION EFFICIENCY OF CAR INTERIOR STEAM CLEANING PROCEDURE AS '*DETTAGLIOAUTO*' PROTOCOL

Equipment used:
IMEX-09EVO, ecological detergent for interiors, ozone generator

DATI IDENTIFICATIVI DEL CLIENTE:
CLIENT:

IM.EX SERVE SRL
VIA DELLE INDUSTRIE, 52
20060 COLTURANO (MI)

NORMA DI RIFERIMENTO:
REFERENCE STANDARD:

Experimental protocol CSI

DISTRIBUZIONE ESTERNA:
OUTSIDE DISTRIBUTION:

IM.EX SERVE SRL

DISTRIBUZIONE INTERNA:
INSIDE DISTRIBUTION:

Copy to Division Head

ENTE DI ACCREDITAMENTO:
ACCREDITATION BODY:

ACCREDIA
L'ENTE ITALIANO DI ACCREDITAMENTO

LAB N°0006
Signatory of EA, IAF and ILAC
Mutual Recognition Agreements

GENERALITIES

- Sample receiving date: 14/11/2017
- Analysis start date: 14/11/2017
- Analysis end date: 20/11/2017
- Deviation from test methods: NO

SAMPLE DESCRIPTION

- CAR INTERIOR STEAM CLEANING PROCEDURE AS '*DETTAGLIOAUTO*' PROTOCOL, using the equipment:
  IMEX-09EVO, ecological detergent for interiors, ozone generator
  (test performed at Im.Ex Serve s.r.l. - Colturano on 14 and 15/11/2017 on Fiesta car).

SAMPLING

Sampling of the surfaces was carried out by the Laboratory inside car compartment before and after the cleaning treatment, with methods and in the quantities necessary to make tests.
The equipment is owned by the Customer and the cleaning treatment is been carried out by Technician Im.Ex Serve s.r.l., according to '*Dettaglioauto*' Protocol.

DECLARATION

The test results of the present report are related exclusively to the tested sample.
The sampling activity does not fall within the scope of Accredia accreditation.
The present test report cannot be partially reproduced without the authorization of CSI managing Director.
The uncertainties are estimated as extended uncertainty obtained multiplying the standard uncertainty by the coverage factor k corresponding to a confidence level of about 95%. Normally, this factor = 2.

(*) Test not accredited by Accredia.
(#) Test performed by external Laboratory, test accredited by Accredia or by other accreditation Body signatory of mutual recognition agreements in the EA or ILAC.
(§) Test performed by external Laboratory, test not accredited by Accredia or by other accreditation Body signatory of mutual recognition agreements in the EA or ILAC.

PERFORMED DETERMINATIONS

Study was conducted by applying an experimental protocol developed by the Laboratory in agreement with the Customer.

1. Purpose

Verify the effectiveness of the CAR INTERIOR STEAM CLEANING PROCEDURE, '*DETTAGLIOAUTO*' PROTOCOL.
The treatment is performed - according to company Protocol - by trained Staff Im.Ex Serve s.r.l..
At the end of the cleaning, an ozone-based treatment was also carried out.

2. Operating modes

In order to assess the efficacy of the cleaning treatment based on the principle of steam, a sampling of the surfaces was carried out inside car compartment.
A car has been used by the Customer to attest the initial state of microbial contamination (dirty state according to traditional car cleaning standards).
Sampling points has been chosen in order to test the different kind of surface materials in the car interiors that are in direct contact with car driver and passengers, selecting those considered to be the most significant for the experimentation.
Were sampled n. 10 sampling points in order to give sufficient statistical robustness to the results of the experimentation.

The tested sampling points are as follows:

1. Backseat (right) - sitting
2. Backseat (left) - sitting
3. Front Seat (driver's side) - sitting
4. Front Seat (driver's side) - headrest
5. Handbrake (handle)
6. Gear lever (handle)
7. Steering wheel
8. Door handle (driver's side)
9. Mat (driver's side)
10. Direction indicator lever

The monitoring was carried out by Technician of the Laboratory in two distinct moments:

- PRE-treatment, on car in use (on date 14/11/2017);
- POST-treatment, after the same car has been subjected to cleaning treatment by trained Staff Im.Ex Serve s.r.l. (on date 15/11/2017).

Monitored parameters are:
- Total viable Count (TVC);
- Fungi (Yeasts and Moulds).

3. Methods of analysis

Contact plates: Total Viable Count
Enumeration of mesophilic aerobic microorganisms (TVC) using contact plates, according to ISO 18593:2004 (excl. par. 6 and 7) and UNI EN ISO 4833-2:2013.

Swabs: Total Viable Count
Enumeration of mesophilic aerobic microorganisms (TVC) using swab, according to ISO 18593:2004 (excl. par. 6 and 7) and UNI EN ISO 4833-1:2013.

(*) Swabs: Enumeration of Yeasts and Moulds
Enumeration of Yeasts and Moulds using swab, according to ISO 18593:2004 e ISO 21527-1:2008.

RESULTS

The following table shows the results of the PRE-treatment surface monitoring (dirty car interiors), compared with microbial contamination values found on POST-treatment surfaces (clean car interiors).

Sampling points description:		U.M.	PRE-TREATMENT	POST-TREATMENT
Backseat (right) - sitting	TVC	CFU/24cm2	71	5
	Moulds		15	0
	Yeasts		0	0
Backseat (left) - sitting	TVC	CFU/24cm2	106	6
	Moulds		280	3
	Yeasts		0	0
Front Seat (driver's side) - sitting	TVC	CFU/24cm2	69	5
	Moulds		29	10
	Yeasts		0	0
Front Seat (driver's side) - headrest	TVC	CFU/24cm2	65	32
	Moulds		47	0
	Yeasts		0	0
Handbrake (handle)	TVC	CFU/on swabbed area	150	40 estimated
	Moulds		present but <40	<10
	Yeasts		<10	<10
Gear lever (handle)	TVC	CFU/on swabbed area	40 estimated	<10
	Moulds		<10	<10
	Yeasts		<10	<10
Steering wheel	TVC	CFU/on swabbed area	290	40 estimated
	Moulds		<10	<10
	Yeasts		<10	<10
Door handle (driver's side)	TVC	CFU/on swabbed area	160	present but <40
	Moulds		present but <40	present but <40
	Yeasts		<10	<10
Mat (driver's side)	TVC	CFU/on swabbed area	670	present but <40
	Moulds		58	<10
	Yeasts		<10	<10
Direction indicator lever	TVC	CFU/on swabbed area	830	present but <40
	Moulds		present but <40	<10
	Yeasts		<10	<10

CONCLUSIONS

Based on the results obtained with this study, the **CAR INTERIOR STEAM CLEANING PROCEDURE AS '*DETTAGLIOAUTO*' PROTOCOL, with use of equipment IMEX-09EVO, ecological detergent for interiors, ozone generator** is to be considered effective in reducing microbial contamination on the surface inside car compartment.
In fact - from an overall evaluation of the pre- and post-treatment results - there is a reduction of the microbial population (bacteria and fungi) about an order of magnitude; reduction that for some sampling points is also of greater entity.

DATA *Date*	Settore Food Packaging Materials *Food Packaging Materials Sector*	Area Testing *Testing Area*
	Alberto Taffurelli	Ing. P. Fumagalli
11/12/2017		

Documento firmato digitalmente ai sensi del D. Lgs. N. 82 del 7 Marzo 2005 e successive modifiche