



Introduction of Jade Cera

Cooking for health and long-life!



Features of JadeCera

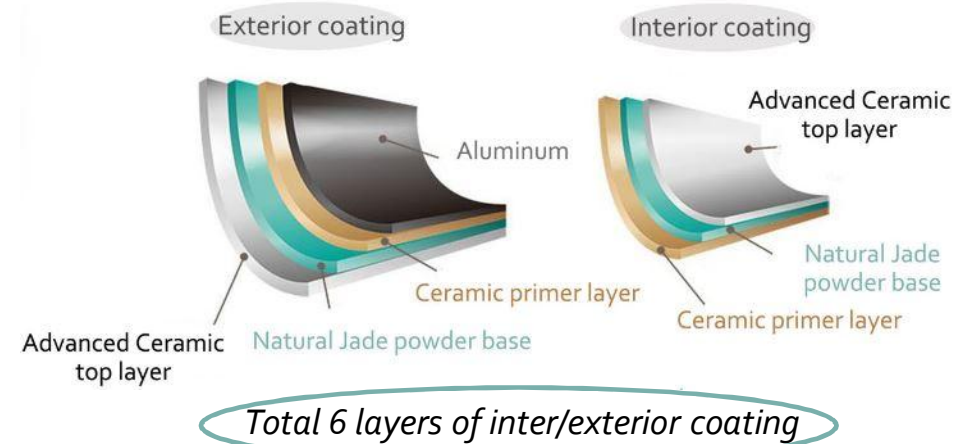
✓ Totally different to sticking ceramic coating in the market : JadeCera(Jade-ceramic) has excellent non-stick effectiveness

✓ Innovative coating strength based on natural Jade powder
(9H test and 200,000 cycles metallic scrubber abrasion test)

✓ Far infrared emitting for healthy and tasty cooking
(more than 93% emissivity)

✓ 99.99% antibacterial activity

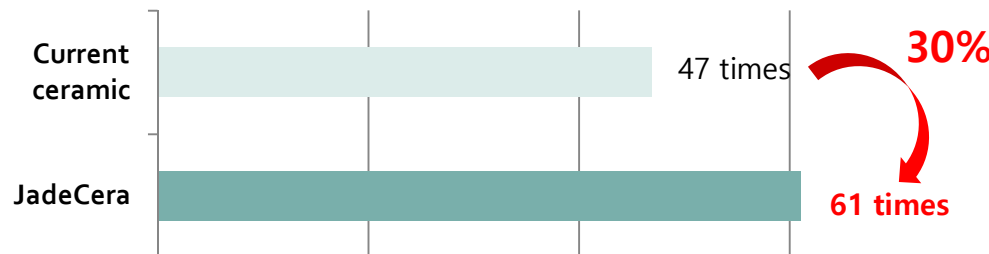
✓ Safe coating without PFOA & PFOS
(comply with FDA regulation and got LFGB certificate)



Features of JadeCera

A. Excellent non-stick effectiveness

To check the non-stick performance, heat the pan under the severe condition and do fried eggs repeatedly without oil until fried eggs are messy.



❖Test method

After cleaning a coated pan with neutral detergent, heat it up to 300°C for 30 minutes then let it cool off at room temperature(20~25°C). Set 180~190°C temperature and fry egg without oil. When it passes 10 egg fry, evaluate 1 cycle and try to make another cycle as same as very beginning of this test



Features of JadeCera

B. Innovative coating strength



The coating was **not damaged even at the maximum strength of 9H**
(KS M ISO 15184 : 2013)

The aluminum surface was **not exposed even when the coating surface was scratched** by iron scrubber for 200,000 cycles(self lab test)



Features of JadeCera

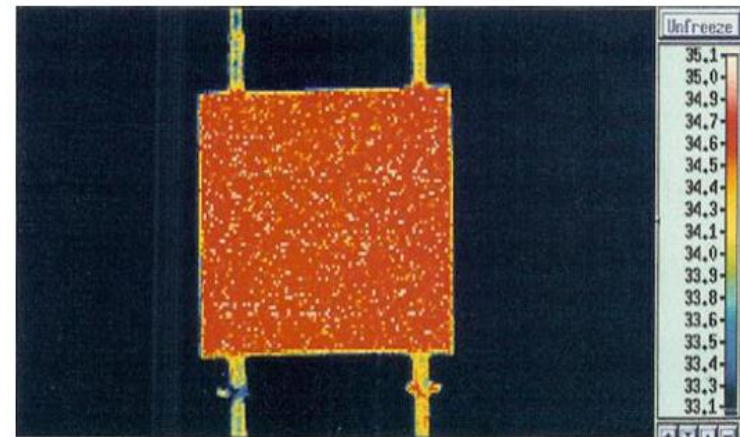
C. High far-infrared emissivity & Energy conservation rate

Emissivity (5~20 μm)	Radiant Energy ($\text{W}/\text{m}^2\mu\text{m}$)
0.93	3.74×10

More than 93% Emissivity

At over 40 Celsius degree, Jade ceramic coating enables even heat distribution and it also help to make food warm for a long time during cooking thanks to jade-powder element.

(Jade powder is made of the high dielectric insulation Steatite silicate)



Measured results of reflected infrared radiation energy processed by image and temperature data

1. Uniformity of temperature distribution according to far-infrared emissivity
2. Excellent far-infrared radiation

Features of JadeCera

D. Antibacterial Effect

JadeCera can prevent growth bacteria from kitchenware

* Confirmed in the experiment using *Escherichia coli* and *Staphylococcus*,
99.99% antibacterial activity

Test microorganisms	Result(s)					
	Initial bacteria number (CFU/film)	Bacteria number after 24 hr at 37 °C		Antimicrobial activity		
		Control (CFU/film)	Sample (CFU/film)		R	Percentage (%)*
<i>Escherichia coli</i> ATCC 8739	3.1 x 10 ⁵	2.8 x 10 ⁷	1st	<25	6.0	>99.99%
			2nd	<25	6.0	>99.99%
			3rd	<25	6.0	>99.99%
<i>Staphylococcus aureus</i> ATCC 6538P	2.9 x 10 ⁵	2.7 x 10 ⁷	1st	<25	6.0	>99.99%
			2nd	<25	6.0	>99.99%
			3rd	<25	6.0	>99.99%

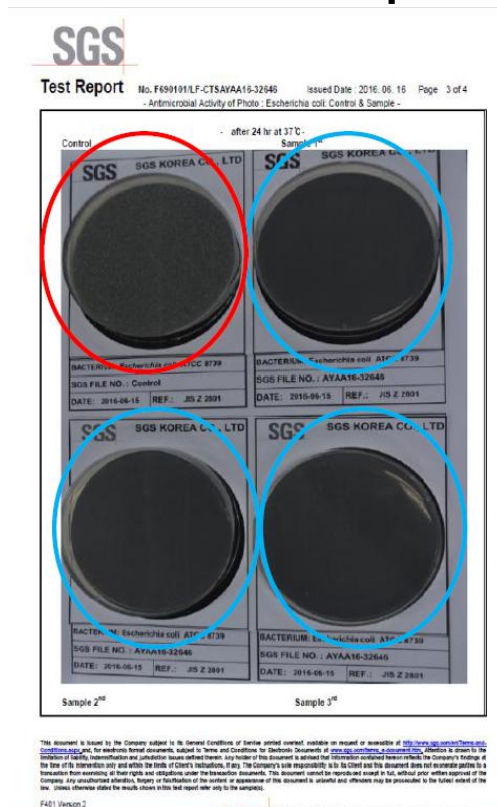
<1.Data of test results>



Features of JadeCera

D. Antibacterial Effect

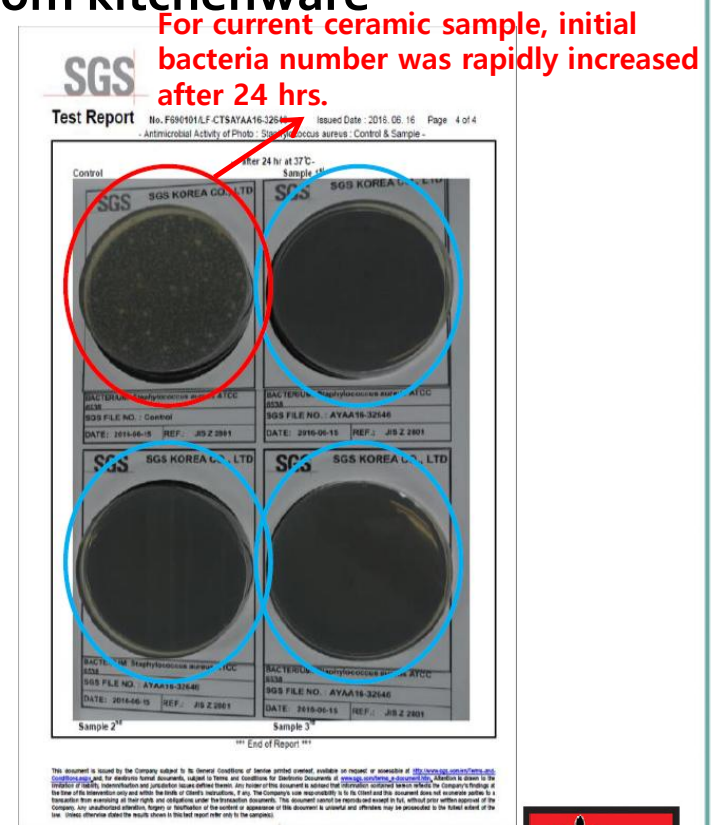
JadeCera can prevent growth bacteria from kitchenware



37°C, After 24 hrs

○ Current ceramic

○ JadeCera



For current ceramic sample, initial bacteria number was rapidly increased after 24 hrs.

<2.Photo of test results>



E. Safe coating

Futbolka Products		 TÜV Rheinland®	
Kunden-Referenz-Nr.: Test Report No.:	10119359 001	Auftrags-Nr.: Order No.:	130053306
Kunden-Referenz-Nr.: Order Reference No.:	N/A	Auftragsdatum: Order date:	21.12.2017
Auftraggeber: Client:	Korea Fine Ceramic Co., Ltd. 37, Mannikgang-gil, Munmak-eup, Wonju-si, Gangwon-do, 26362,		
Prüfgegenstand: Test Item:	Ceramic Coating PAN		
Benennung / Typ-Nr.: Identification / Type No.:	CERAMICA Fine Ceramic Coating		
Auflagebehalt: Clear content:	Product Testing		
Prüfungsmethode: Test Specification:	Selected tests for the suitability for contact with foodstuffs complied with the following standards: EN 61-1708 (Lebensmittel-, Bedarfsgegenstände- und Futtermittelgesetzbuch)		
Wareneingangsgutdatum: Date of receipt:	26.12.2017		
Prüfnummer-Nr.: Test sample No.:	01543000201 001		
Prüfzeitraum: Testing period:	26.12.2017 – 00.01.2018		
OrdnungsPrüfung: Place of testing:	TÜV Rheinland Shanghai Co., Ltd		
Prüfabortraum: Testing laboratory:	TÜV Rheinland Shanghai Co., Ltd		
Prüfgegenstände: Test results:	Refer to the following page(s)		
geprüft von / tested by: 		kontrolliert von / reviewed by: 	
10.01.2018 Jingman Kim / Manager 10.01.2018 GAUNGYONG LEE / Director	10.01.2018 Gaungyong Lee / Manager 10.01.2018 GAUNGYONG LEE / Director		
Sonstiges / Other:			
Zustand des Prüfgegenstandes bei Anlieferung: Condition of the test item at delivery:		Prüfzustand vollständig und unbeschädigt Test item complete and undamaged	
1 = gut 2 = befriedigend 3 = mangelhaft 4 = ungenügend 5 = nicht geprüft	1 = vollständig 2 = befriedigend 3 = mangelhaft 4 = ungenügend 5 = nicht geprüft	1 = vollständig 2 = befriedigend 3 = mangelhaft 4 = ungenügend 5 = nicht geprüft	1 = vollständig 2 = befriedigend 3 = mangelhaft 4 = ungenügend 5 = nicht geprüft
Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmaterial und darf ohne Genehmigung der Prüfstelle nicht anderweitig vervielfältigt werden. Great! Nicht permission of the Prüfstelle this test report is not permitted to be reproduced or further disseminated. This test report does not entitle to any third test result.			
TÜV Rheinland GmbH • D-50829 Köln • Tel.: +49 228 9099-1 • Fax: +49 228 9099-100 • E-Mail: info@tuev.com • www.tuev.com			

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Restricted Materials Conformity Report

CETR-QRT01.2

Prepared for: Queen Act

Address: -

Part Name: Frying Pan

Purchased Number: -

Samples Received Date: January 29, 2020

Testing Period: January 30 and February 25, 2020

Tests Requested: California Proposition 65 (The Safe Drinking Water and Toxic Enforcement Act, 1986)

Date of Report: February 27, 2020

Results

Directive / Regulation	Conclusions	Substances
Proposition 65	Compliant	-

Legend

Compliant Compliant for all evaluated substances.

Compliant contingent: Compliance is contingent upon client addressing identified substances. The action may include a review of files, application, or use of an appropriate restriction/warning.

Compliant pending: Compliant for most substances. Further testing/evaluation of identified substances by Client is required to address remaining files.

Open note: Identified substance lists require client information or feedback to resolve.

Not compliant: Not compliant for identified substances.

Prepared by: Claggen Inc. 4043 Carling Avenue, Suite 120, Kanata, ON Canada K2K 2A4

Tel: +1-613-588-4444

v. 2.2

<LFGB certificate>

<FDA compliance>

<PFOA & PFOS free>

<UL Proposition 65>



General Properties

TEST ITEM	METHOD				RESULT
Pencil Hardness	100mm * 5 times with 1kgf (45 degree angle) no scratch, no peel-off on dry film				Over 9H
Adhesion	Cross Cut Guide, 2mm interval cutting, Tape and peel off				25/25
Impact Resistance	Dropping 500±1g Steel Ball from 100cm height				PASS
Heat Resistance	Heating at 300℃ / 1hrs, Check*				PASS
Boiling Water Resistance	Boiling a panel in water at 98±2℃ for 2hrs, Check*				PASS
Abrasion Resistance I (DRY)	Taber Abrasion Tester CS-17, 20,000-cycle alternating motion based on 1kg weight load with 60rpm speed Substrate under the dry film shall not be exposed after the test				PASS
Abrasion Resistance II (WET)	Taber Abrasion CS-17, add water and detergent (water: 200ml/detergent: 1g), 200,000-cycle alternating motion based on 1kg weight load with 60rpm speed Substrate under the dry film shall not be exposed after the test				PASS
Abrasion Resistance III (WET)	Taber According to fry pan size, steel ball, silicon carbide, water (standard) rotating motion based on 300rpm. Substrate under the dry film shall not be exposed after the 3 cycles test. (1 cycle - 15 min)				PASS
Non-stick I	Cleaning a neutral detergent, Cooking egg fry test at 180℃~190℃ (temperature of surface) without oil for 100 sec. for each time, and counting how many eggs pass. Check*				Over 130times
Non-stick II (Preheating Nonstick TEST)	After cleaning a coated pan with neutral detergent, heat it up to 300℃ for 30 minutes then let it cool off at room temperature(20~25℃). Set 180~190℃ temperature and fry egg without oil. When it passes 10 egg fry, evaluate 1 cycle and try to make another cycle as same as very beginning of this test.				Over 5cycle
Corrosion Resistance I	Boiling 10% salt water(95±2℃) for 8 hours, and checking corrosion after 16 hours left at room temperature				PASS
Corrosion Resistance II	Boiling 10% salt water(95±2℃) for 20 hours, and checking corrosion				PASS
Solvent Resistance	Soak a panel in organic solvent such as BTX, Alcohol, Ketone for 24hrs, Check*				PASS
Acetic Acid	Soaking 4/5 of panel in 98% of acetic acid for 24 hrs, Check*				PASS
Alkaline Resistance	Soaking 4/5 of panel in 5% of sodium carbonate for 24 hrs., Check*				PASS
Far Infrared Ray Emission	Test value based on 100% of blackbody emission of far infrared ray				91 ~ 94%
Extraction Test	Checkup for PB, As, Cd, Phenol, Formaldehyde, and evaporated residue				Not Detected
PFOA content	Analysis of PFOA content by LCMS after soaking a panel in 3% of acetic acid at 100℃ for 2hrs.				Not Detected
FDA Compliance	Elution test based on US FDA 21 CFR 175.300	Substrate	Aluminum Alloy(A3003)	Coating	Air-Spraying
*Exterior: Discoloration, Swollen, Coating peel-off, Gloss-change, Crack		Products	Base : Jade-Ceramic Top : Jade-Ceramic	Curing	Setting : 40→250℃/ for 15min Curing at : 250℃/ for 10min
		Pre-treatment	Sand Blast(#80~100)	Firm Thickness	Base : 33±5μm, Top 6±2μm

Product Photos

