



Laboratory Testing Report

<i>Company</i>	Noroo Paint And Coatings
<i>Contact Name</i>	Sung Woo Jung swjung@noroo.com Yun-jae So syj@noroo.com
<i>Report Date</i>	January 7, 2020
<i>Category</i>	Detailed Performance
<i>Category Type</i>	Confirmation
<i>PS#</i>	3025-C-2019-145-17860
<i>MPI Category #</i>	145
<i>Product Label</i>	NOROO
<i>Product Name</i>	Natural Safe Eggshell
<i>Product Code</i>	NA
<i>Batch Number</i>	119 JUL 1111A
<i>Testing Results</i>	PASS
<i>Approval Expiry Date</i>	Up to 2 years, based on the Call for Confirmation Schedule
<i>Failure Notice</i>	
<i>Comments</i>	
<i>MPI Technical Director</i>	Bob Welch
<i>Technical Specialist</i>	Terrance Mayes
<i>MPI Invoice #</i>	D19-1015

A pass report is not the final approval.

**Final approval occurs when the product is published in the MPI Approved Products List.
The MPI Approved Products List is updated by the 5th of each month.**

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January 7, 2020

■GENERAL INFORMATION

This paint is based on 100% Acrylic polymer, pigment and stabilizers with low odor characteristics and a VOC of less than 10 grams per liter. It is a eggshell-gloss Emulsion Paint with such advantages as good scrubbable resistance, alkali resistance, water resistance, cleansability(washable), durability, mildew resistance and anti-microbial properties for interior use, It is intended for use in areas such as hospitals and other occupied buildings where the odor and VOC levels of conventional latex products would preclude their use.

■SUITABLE USE

Various kinds of ceilings and walls (concrete, P.C., mortar, plaster and interior wall and ceiling surface including gypsum wallboard,plaster,primed wood surfaces)

■SPECIFICATION

A. Type: Acrylic polymer/Interior/Institutional low odor

B. Drying Times:	5°C	20°C	30°C
Set to Touch	1H	1/2H	1/3H
Dry Hard	2H	1H	2/3H
For Over coat (Min.)	6H	3H	2H

* H: Hour

C. Consistency: Ready for use

D. Thinner: Tap-Water (Max. 10% at 1st coating,
Max. 5% at 2nd coating)

E. Specific Gravity: Appr. 1.36

F. Theoretical Coverage: 5~7 m²/L/2 coats/60μ
(Dry film thickness)

G. Shade: White and tints

H. Texture: Egg shell (Gloss 60 degree : 10 - 25)
(Gloss 85 degree : 10 - 35)

■DIRECTION FOR USE

A. Surface Preparation

1. Eliminate oil, water, grit, dirt, marked paint and any foreign matters.

B. Preparation of Paint

1. Stir to be mixed uniformly.
2. Avoid excessive thinning.

C. Application

1. Can be applied by brush, spray.

■OTHER CAUTIONS -

- Will not form a homogeneous film below 5°C(41°F) or at humidities greater than 95% R.H.
- Don't store or ship the paint at temperatures less than 5°C(41°F) nor above 35°C(95°F)

3. Surface to be painted shall be prepared an instrument-measured moisture content not exceeding 8% and less than 9 pH.

* This paint is in accordance with Korea Standard.

* The information and data given herein are based upon tests and experiences considered reliable, and are believed to be accurate. The coverage depend on the shape of surface to be coated, surface roughness, weathe conditions during application and application method, so that you are urged fully to review them prior to your practical application.

* The date of issue: 2008.12

MATERIAL SAFETY DATA SHEET

SECTION I GENERAL INFORMATION

- A. PRODUCT NAME: Natural Safe- Eggshell (MPI 145)
Institutional Low odor/ VOC / Interior
- B. MANUFACTURERS NAME: NOROO Paint & Coatings Co., Ltd.
615 PARK DAL DONG, AN YANG CITY
KYUNG KI DO, KOREA
TEL: (031)467-6150

SECTION II COMPOSITION

CHEMICAL NAME	CAS NO	CONTENTS
ACRYLIC POLYMER	NOT HAZARD	20~50
WATER	7732-18-5	30~50
TITANIUM DIOXIDE	13463-67-7	15~30
CALCINED CLAY	66402-68-4	0~10
MICA	12001-26-2	10~20
S1	-	0~3

SECTION III PHYSICAL PROPERTIES

BOILING RANGE	200~225 deg.F
EVAPORATION RATE	SLOWER THAN ETHER
VAPOR DENSITY	HEAVIER THAN AIR
% VOLATILE VOLUME	50 MAX
SPECIFIC GRAVITY	1.2~1.4
VISCOSITY	90~110KU

SECTION IV – FIRE AND EXPLOSION HAZARD DATA

FLAMMABILITY CLASSIFICATION:

FLASH POINT: NOT ESTABLISHED

LEL: N/A

EXTINGUISHING MEDIA: FOAM, ALCOHOL FOAM, CO2, DRY CHEMICAL, WATER FOG

UNUSUAL FIRE AND EXPLOSION HAZARDS:

EXTINGUISHING MEDIA ABOVE IS RECOMMENDED ON DRIED FILMS OF THIS MATERIAL THAT IS BURNING. THIS MATERIAL IS NON-COMBUSTIBLE BUT DRIED FILMS ARE CAPABLE OF BURNING AND SUPPORTING COMBUSTION WHEN IN CONTACT WITH OPEN FLAMES.

SPECIAL FIREFIGHTING PROCEDURES:

OBSERVE RECOMMENDED PROCEDURES IN HANDLING FIRE AREAS. WEAR APPROPRIATE FIRE FIGHTING EQUIPMENT INCLUDING A SELF CONTAINED BAEATHING APPARATUS.

SECTION V – HEALTH HAZARD DATA

EFFECTS OF OVEREXPOSURE:

VAPOR ODORS MAY CAUSE IRRITATION IN THE UPPER AND LOWER RESPIRATORY TRACTS, NAUSEA, HEADACHES, AND DIZZINESS. EYE CONTACT CAN CAUSE IRRITATION, REDNESS, AND VOMITING, DIARRHEA, AND GASTROINTESTINAL IRRITATION.

MEDICAL CONDITIONS PRONE TO AGGRAVATIO BY EXPOSURE:

OVEREXPOSURE TO VAPORS CAN PRODUCE HEADACHES, DIZZINGESS, AND NAUSEA.

PRIMARY PROUTE(S) OF ENTRY: INHALATION, INGESTION

EMERGENCY AND FIRST AID PROCEDURES:

IF AFFECTED BY VAPORS, MOVE PERSON TO FRESH AIR. APPLY ARTIFICIAL RESPIRATION TO PRESON WHO LOSES CONSCIOUSNESS AND CALL A DOCTOR IMMEDIATELY. TREAT EYE

AND SKIN CONTACT BY THOROUGHLY WASHING WITH CLEAN WATER. IF IRRITATION PERSISTS SEE A DOCTOR IMMEDIATELY. IF MATERIAL IS INGESTED AND THE PERSON IS CONSCIOUS GIVE TWO GLASSES OF WATER TO DRINK AND CALL A DOCTOR IMMEDIATELY.

SECTION VI – REACTIVITY DATA

STABILITY: STABLE

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR

HAZARDOUS POLYMERIZATION INFORMATION IS NOT ESTABLISHED.

HAZARDOUS DECOMPOSITION PRODUCTS:

BURNING CAN PRODUCE CARBON DIOXIDE AND OR CARBON MONOXIDE.

CONDITIONS TO AVOID:

AVOID TEMPERATURES BELOW 40 degrees Fahrenheit. AVOID FREEZING CONDITIONS.

INCOMPATIBILITY (MATERIALS TO AVOID):

AVOID MATERIALS THAT REACT WITH WATER, ALSO STRONG ACIDS AND ALKALIS.

SECTION VII – SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

DIKE AND ABSORB SPILLED MATERIAL WITH INERT ABSORBENT MATERIAL SUCH AS SAND, EARTH, AND SAW DUST. USE RAGS TO CLEAN UP SMALL AMOUNTS OF SPILLED MATERIAL.

WASTE DISPOSAL METHOD:

COLLECT MATERIAL CONTAMINATED ABSORBENT AND RAGS INTO A DISPOSABLE CONTAINER AND DISPOSE OF IN ACCORDANCE TO LOCAL, STATE, AND FEDERAL REGULATIONS. CONSULT WITH YOUR LOCAL HAZARDOUS WASTE REGULATORS REGARDING LANDFILL DUMPING.

SECTION VIII – SAFE HANDLING AND USE INFORMATION

RESPIRATORY PROTECTION:

WEAR APPROVED ORGANIC VAPOR RESPIRATOR UNLESS VENTILATION EQUIPMENT IS ADEQUATE TO KEEP AIRBORNE CONCENTRATIONS BELOW THE EXPOSURE STANDARDS.

VENTILATION:

GENERAL MECHANICAL VENTILATION MAY BE SUFFICIENT TO KEEP PRODUCT VAPOR CONCENTRATIONS BELOW SPECIFIED TLV RANGES. IF INADEQUATE, USE LOCAL EXHAUST.

PROTECTIVE GLOVES:

USE IMPERMEABLE SOLVENT RESISTANT GLOVES TO PROTECT FROM SKIN CONTACT.

EYE PROTECTION:

USE SAFETY GOGGLES, CHEMICAL SAFETY GLASSES AND OR FACE SHIELDS TO PROTECT EYES

OTHER PROTECTIVE EQUIPMENT:

IMPERMEABLE APRONS AND PROTECTIVE CLOTHING ARE ADVISED WHEN WORKING WITH THIS PRODUCT. THE USE OF HEAD CAPS ARE RECOMMENDED WHENEVER POSSIBLE.

HYGIENIC PRACTICES:

EYE WASHES AND SAFETY SHOWERS IN THE WORKPLACE ARE RECOMMENDED.

SECTION IX – SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING:

KEEP CONTAINERS CLOSED WHEN NOT IN USE. DO NOT STORE OR HANDLE NEAR HEAT, FLAMES AND STRONG OXIDANTS. INSPECT FOR LEAKS IN ALL CONTAINERS.

OTHER PRECAUTIONS:

DO NOT STORE IN FREEZING AREAS. KEEP ABOVE 40 degrees F. KEEP OUT OF REACH OF CHILDREN.

* * DISCLAIMER- THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED
* * ACCURATE. HOWEVER, NO WARRANTY, WHETHER EXPRESSED OR IMPLIED IS MAE.

KOREA CONFORMITY LABORATORIES

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Url.: www.kcl.re.kr

Certificate of Testing (Inspection) Result

Sample No. of Issue : TSRB15009
Name of Applicant : NOROO Paint & Coatings Co., Ltd. Kim Soo Kyoung
Address of Applicant : 615, Bakdal 2-dong, Manan-gu, Anyang-si, Gyeonggi-do, Korea
Date of Receipt : 2010-11-15
Name of Test Sample : Natural Safe - Eggshell (MPI 145)
Object of Test : Quality control
Test Result(s) : Please see the following page(s)


The above is the result of testing (inspection) specimen provided by the applicant, and the name of sample has been submitted by the applicant

Jan.
month

10
day

2011
year

Signed :



The general manager of Korea Conformity Laboratories



Certificate of Testing (Inspection) Result

Sample No. of Issue : TSRB15009

Date of Receipt : 2010-11-15

Name of Test Sample : Natural Safe - Eggshell (MPI 145)

Result of Testing (Inspection)

Test Items	Unit	Sample	Results	Test Method
Consistency	K.U.	1	109	MPI # 145 : 2010
Dry time, Dry hard	min	1	30	MPI # 145 : 2010
Finess of Grind	NS	1	6	MPI # 145 : 2010
Gloss 60 degree	-	1	15	MPI # 145 : 2010
Sheen 85 degree	-	1	31	MPI # 145 : 2010
Hiding power	%	1	99	MPI # 145 : 2010
Reflectance	%	1	93	MPI # 145 : 2010
Alkali Resistance	-	1	pass	MPI # 145 : 2010
Scrubbability	%	1	17	MPI # 145 : 2010
Burnish Resistance	%	1	7	MPI # 145 : 2010
Cleanability	-	1	No stain, $\Delta E : 0.42$	MPI # 145 : 2010
Applicability and Appearance	-	1	pass	MPI # 145 : 2010
Flexibility	-	1	pass	MPI # 145 : 2010
Odor	-	1	pass	MPI # 145 : 2010
VOC	g/L	1	Not detected	MPI # 145 : 2010

