Certificate of Analysis

A quality management system registered to the international standard ISO 9001 was used to manufacture and test this material.

Certificate prepared at

Gracefruit Limited 146 Glasgow Road Stirlingshire FK4 1QL

Customer details

Customer Ref.

Inspection Lot 040000652549 **C of A Printed.** 20.01.2016

Croda Order No. Croda Del. No.

Quantity. 0.000

Batch Details

Product Name: Product Code: Batch No: POLAWAX NF-PA-(RB) EM03398/0025/B28

0001021466

Date of test: 13.10.2015
Date of manufacture: 11.10.2015

Retest date: 01.04.2017

Specification: AMENDED 28-AUG-2015

Quality Control Results

Analytical Test		Specification Limit			
Characteristic	Lower	Upper	Value	Unit	Status
Addendum 00	PASS OR FAIL		Pass	-	Р
REVISION NUMBER	4.0		Pass	-	Р
MATERIAL CONFORMS TO	USP/NF		Pass	-	Р
MONOGRAPH NAME	EMULSIFYING WAX		Pass	-	Р
APPEARANCE (COLOUR)	WHITE TO PAL	E YELLOW	Pass	-	Р
APPEARANCE (FORM)	SOLID		Pass	-	Р
ACID VALUE	0.0	1.0	0.1	mg KOH/g	Р
COLOUR GARDNER	0	1	0	Gardner	Р
HYDROXYL VALUE	178	192	181	mg KOH/g	Р
IODINE VALUE (HANUS)	0.0	3.5	0.4	gl2/100g	Р
MELTING RANGE	50	54	52	°C	Р
PH (3% DISPERSION)	5.5	7.0	7.0		Р
SAPONIFICATION VALUE	0	14	10	mg KOH/g	Р
RESIDUAL ETHYLENE OXIDE	1 PPM MAX		Pass	-	Р
RESIDUAL DIOXANE	5 PPM MAX		Pass	-	Р
	Characteristic Addendum 00 REVISION NUMBER MATERIAL CONFORMS TO MONOGRAPH NAME APPEARANCE (COLOUR) APPEARANCE (FORM) ACID VALUE COLOUR GARDNER HYDROXYL VALUE IODINE VALUE (HANUS) MELTING RANGE PH (3% DISPERSION) SAPONIFICATION VALUE RESIDUAL ETHYLENE OXIDE	Characteristic Lower Addendum 00 REVISION NUMBER MATERIAL CONFORMS TO MONOGRAPH NAME APPEARANCE (COLOUR) APPEARANCE (FORM) ACID VALUE COLOUR GARDNER HYDROXYL VALUE IODINE VALUE (HANUS) MELTING RANGE PH (3% DISPERSION) SAPONIFICATION VALUE RESIDUAL ETHYLENE OPASS OR FAIL 4.0 USP/NF EMULSIFYING USP/NF EMULSIFYING SOLID 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	Characteristic Lower Upper Addendum 00 REVISION NUMBER 4.0 MATERIAL CONFORMS TO MONOGRAPH NAME EMULSIFYING WAX APPEARANCE (COLOUR) APPEARANCE (FORM) ACID VALUE 0.0 1.0 COLOUR GARDNER 0 1 HYDROXYL VALUE 178 192 IODINE VALUE (HANUS) 0.0 3.5 MELTING RANGE 50 54 PH (3% DISPERSION) 5.5 7.0 SAPONIFICATION VALUE 1 PPM MAX OXIDE	CharacteristicLowerUpperValueAddendum 00PASS OR FAILPassREVISION NUMBER4.0PassMATERIAL CONFORMS TOUSP/NFPassMONOGRAPH NAMEEMULSIFYING WAXPassAPPEARANCE (COLOUR)WHITE TO PALE YELLOWPassAPPEARANCE (FORM)SOLIDPassACID VALUE0.01.00.1COLOUR GARDNER010HYDROXYL VALUE178192181IODINE VALUE (HANUS)0.03.50.4MELTING RANGE505452PH (3% DISPERSION)5.57.07.0SAPONIFICATION VALUE01410RESIDUAL ETHYLENE1 PPM MAXPassOXIDE	Characteristic Lower Upper Value Unit Addendum 00 PASS OR FAIL Pass - REVISION NUMBER 4.0 Pass - MATERIAL CONFORMS TO USP/NF Pass - MONOGRAPH NAME EMULSIFYING WAX Pass - APPEARANCE (COLOUR) WHITE TO PALE YELLOW Pass - APPEARANCE (FORM) SOLID Pass - ACID VALUE 0.0 1.0 0.1 mg KOH/g COLOUR GARDNER 0 1 0 Gardner HYDROXYL VALUE 178 192 181 mg KOH/g IODINE VALUE (HANUS) 0.0 3.5 0.4 gl2/100g MELTING RANGE 50 54 52 °C PH (3% DISPERSION) 5.5 7.0 7.0 SAPONIFICATION VALUE 0 14 10 mg KOH/g RESIDUAL ETHYLENE 1 PPM MAX Pass - OXIDE

This Product has been manufactured and tested to GMP in accordance with EXCiPACT

Batch Status: Pass

The quality tests on this batch are reported above. The tests carried out are those necessary to demonstrate

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C of A Printed. 20.01.2016
Croda Order No.
Croda Del. No.
Quantity. 0.000

compliance with our product specification and are not intended to guarantee the product as suitable for any application

beyond those contained in the specification. We recommend you perform your own quality and or identification checks on receipt

The name printed at the end of this document is an electronic signature.

Confirmed by

Elizabeth Carnahan