

# FUGRO TECHNICAL SERVICES LIMITED

Fugro Development Centre,  
5 Lok Yi Street, Tai Lam,  
Tuen Mun, N.T.,  
Hong Kong.

Tel : +852 2450 8233  
Fax : +852 2450 6138  
E-mail : matlab@fugro.com  
Website : www.fugro.com

## MaterialLab

Report No. : 165320EN162938



Page 1 of 1

### Test Report on Analysis of Adhesive

#### Information Supplied by Client

Client : DGL Camel (Hong Kong) Ltd.  
Client's address : 22/F., 78 Hung To Road, Kwun Tong, Kowloon  
Project : Determination of Formaldehyde Content  
Sample description : One sample of multi-purpose construction adhesive  
Sample identification : Selleys Liquid Nails Upgraded Formula (Brown)  
Test required : Formaldehyde content

#### Laboratory Information

Lab sample I.D. : EN162938/1  
Date of receipt of sample : 15/11/2016  
Date test completed : 28/11/2016  
Test method used : GB18583-2008 Appendix A

#### Results :

Sample identification	Formaldehyde content*
Selleys Liquid Nails Upgraded Formula (Brown)	Not Detected

\*Remark : The detection limit of Formaldehyde content is 0.05g/kg.

Supervised by : K.F. Wong

Certified by :

Approved Signatory : HO Kin Man, John  
Manager – Chemistry Department

Date

\*\* End of Report \*\*

21/12/2016

Note : This report refers only to the sample(s) tested.

# FUGRO TECHNICAL SERVICES LIMITED

Fugro Development Centre,  
5 Lok Yi Street, Tai Lam,  
Tuen Mun, N.T.,  
Hong Kong.

Tel : +852 2450 8233  
Fax : +852 2450 6138  
E-mail : matlab@fugro.com  
Website : www.fugro.com

# MaterialLab

Report No. : 165320EN162938(1)



Page 1 of 1

## Test Report on Analysis of Adhesive

### Information Supplied by Client

Client : DGL Camel (Hong Kong) Ltd.  
Client's address : 22/F., 78 Hung To Road, Kwun Tong, Kowloon  
Project : Determination of Formaldehyde Content  
Sample description : One sample of multi-purpose construction adhesive  
Sample identification : Selleys Liquid Nails Upgraded Formula (White)  
Test required : Formaldehyde content

### Laboratory Information

Lab sample I.D. : EN162938/2  
Date of receipt of sample : 15/11/2016  
Date test completed : 28/11/2016  
Test method used : GB18583-2008 Appendix A

### Results :

Sample identification	Formaldehyde content*
Selleys Liquid Nails Upgraded Formula (White)	Not Detected

\*Remark : The detection limit of Formaldehyde content is 0.05g/kg.

Supervised by : K.F. Wong

Certified by :   
Approved Signatory : HO Kin Man, John  
Manager – Chemistry Department

Date : 21/12/2016  
\*\* End of Report \*\*

Note : This report refers only to the sample(s) tested.

## FUGRO TECHNICAL SERVICES LIMITED

Fugro Development Centre,  
5 Lok Yi Street, Tai Lam,  
Tuen Mun, N.T.,  
Hong Kong.

Tel : +852 2450 8233  
Fax : +852 2450 6138  
E-mail : matlab@fugro.com.hk  
Website : www.materialab.com.hk

# Materialab

Report No. : 154544EN151192



Page 1 of 2

### Test Report on Analysis of Adhesive

#### Information Supplied by Client

Client : DGL Camel (Hong Kong) Ltd.

Client's address : 22/F, 78 Hung To Road, Kwun Tong, Kowloon, Hong Kong

Project : VOC Test

Sample description : One sample of Multi-purpose Construction Adhesive

Sample identification : Selleys Liquid Nails Upgraded Formula (HK)  
Batch: MD 050915  
C004 EX0318

Test required : VOC content for adhesive

#### Laboratory Information

Lab sample I.D. : EN151192/1

Date of receipt of sample : 14/09/2015

Date test completed : 30/09/2015

Test method used : USEPA Method 24 & SCAQMD Method 303-91

Calculated based on results of

- a) Volatile content – USEPA Method 24 Section 11.3.1 & ASTM D2369-98
- b) Water content – USEPA Method 24 Section 11.3.2 & ASTM D4017-96a
- c) Coating density – USEPA Method 24 Section 11.3.3 & ASTM D1475-96
- d) Exempt compounds – SCAQMD Method 303-91

Dilution ratio : -

*Note : This report refers only to the sample(s) tested.*



**FUGRO TECHNICAL SERVICES LIMITED**

Fugro Development Centre,  
5 Lok Yi Street, Tai Lam,  
Tuen Mun, N.T.,  
Hong Kong.

Tel : +852 2450 8233  
Fax : +852 2450 6138  
E-mail : matlab@fugro.com.hk  
Website : www.materialab.com.hk

**Materialab**

Report No. : 154544EN151192

Page 2 of 2

**Results :**

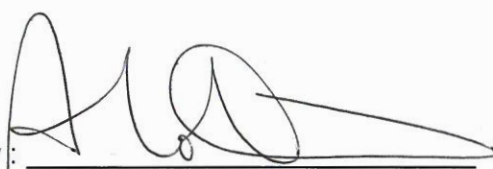
	Result
Volatile content ( $W_v$ ), %wt	29.32
Water content ( $W_w$ ), %wt	0.27
Exempt compounds ( $W_{ex}$ ), %wt	3.14 (Acetone) 25.00 (Methyl Acetate)
Coating density ( $D_c$ ) @ 25°C, g/ml	1.269
VOC content, g/L of adhesive, less water and less exempt compounds	19

Note:

Equation for calculation of VOC:

$$\begin{aligned}\text{VOC} &= (W_a - W_b - W_c) / (V_d - V_e - V_f) \\ &= [(W_a / W) - (W_b / W) - (W_c / W)] * W / V_d / (1 - V_e / V_d - V_f / V_d) \\ &= [(W_v - W_w - W_{ex})] * [D_c * 1000 / (100 - W_w * D_c / D_w - W_{ex} * D_c / D_{ex})] \\ &= (W_v - W_w - W_{ex}) * D_c * 1000 / (100 - W_w * D_c / D_w - W_{ex} * D_c / D_{ex})\end{aligned}$$

where

 $W_a$  is weight of volatile compounds in grams (per unit of sample) $W_b$  is weight of water in grams (per unit of sample) $W_c$  is weight of exempt compounds in grams (per unit of sample) $W$  is weight of material in grams (per unit of sample) $V_d$  is volume of material in litres (per unit of sample) $V_e$  is volume of water in litres (per unit of sample) $V_f$  is volume of exempt compounds in litres (per unit of sample) $D_w$  is density of water in g/ml @ 25°C (i.e. 0.997072 g/ml) $D_{ex}$  is density of exempt compounds in g/ml @ 25°CSupervised by : K.F. WongCertified by : Approved Signatory: HO Kin Man, John  
Manager – Chemistry Department

Date

\*\* End of Report \*\*

: 2/10/2015

Note : This report refers only to the sample(s) tested.

## FUGRO TECHNICAL SERVICES LIMITED

Fugro Development Centre,  
5 Lok Yi Street, Tai Lam,  
Tuen Mun, N.T.,  
Hong Kong.

Tel : +852 2450 8233  
Fax : +852 2450 6138  
E-mail : matlab@fugro.com.hk  
Website : www.materialab.com.hk

# Materialab

Report No. : 141530EN140563



Page 1 of 2

### Test Report on Analysis of Adhesive

#### Information Supplied by Client

Client : DGL CAMEL (HONG KONG) LTD.

Client's address : 6/F, CAMELPAINT CENTRE, NO.1 HING YIP STREET,  
KWUN TONG, KOWLOON, HONG KONG

Project : VOC Testing

Sample description : One sample of Multi-purpose construction adhesive

Sample identification : Selleys Liquid Nails Upgraded Formula **White**  
(MD220514, B010EX1116)

Test required : VOC content for adhesive other than PVC, CPVC, ABS pipe  
cements and adhesive primer

#### Laboratory Information

Lab sample I.D. : EN140563/1

Date of receipt of sample : 30/05/2014

Date test completed : 11/06/2014

Test method used : USEPA Method 24 & SCAQMD Method 303-91

Calculated based on results of

- a) Volatile content – USEPA Method 24 Section 11.3.1  
& ASTM D2369-98
- b) Water content – USEPA Method 24 Section 11.3.2  
& ASTM D4017-96a
- c) Coating density – USEPA Method 24 Section 11.3.3  
& ASTM D1475-96
- d) Exempt compounds – SCAQMD Method 303-91

Dilution ratio : No dilution

*Note : This report refers only to the sample(s) tested.*

**FUGRO TECHNICAL SERVICES LIMITED**

Fugro Development Centre,  
5 Lok Yi Street, Tai Lam,  
Tuen Mun, N.T.,  
Hong Kong.

Tel : +852 2450 8233  
Fax : +852 2450 6138  
E-mail : matlab@fugro.com.hk  
Website : www.materialab.com.hk

**Materialab**

Report No. : 141530EN140563

Page 2 of 2

**Results :**

	Result
Volatile content ( $W_v$ ), %wt	32.35
Water content ( $W_w$ ), %wt	0.04
Exempt compounds ( $W_{ex}$ ), %wt	3.73 (Acetone) 25.61 (Methyl acetate)
Coating density ( $D_c$ ) @ 25°C, g/ml	1.238
VOC content, g/L of adhesive, less water and less exempt compounds	61

Note:

Equation for calculation of VOC:

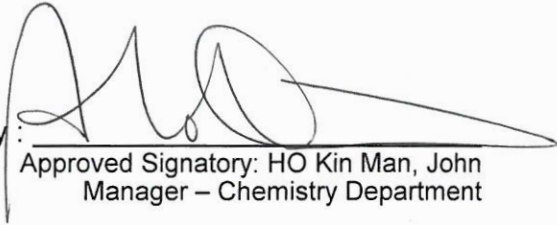
$$\begin{aligned}
 \text{VOC} &= (W_a - W_b - W_c) / (V_d - V_e - V_f) \\
 &= [(W_a / W) - (W_b / W) - (W_c / W)] * W / V_d / (1 - V_e / V_d - V_f / V_d) \\
 &= [(W_v - W_w - W_{ex})] * [D_c * 1000 / (100 - W_w * D_c / D_w - W_{ex} * D_c / D_{ex})] \\
 &= (W_v - W_w - W_{ex}) * D_c * 1000 / (100 - W_w * D_c / D_w - W_{ex} * D_c / D_{ex})
 \end{aligned}$$

where

 $W_a$  is weight of volatile compounds in grams (per unit of sample) $W_b$  is weight of water in grams (per unit of sample) $W_c$  is weight of exempt compounds in grams (per unit of sample) $W$  is weight of material in grams (per unit of sample) $V_d$  is volume of material in litres (per unit of sample) $V_e$  is volume of water in litres (per unit of sample) $V_f$  is volume of exempt compounds in litres (per unit of sample) $D_w$  is density of water in g/ml @ 25°C (i.e. 0.997072 g/ml) $D_{ex}$  is density of exempt compounds in g/ml @ 25°C

Supervised by : K.F. Wong

Certified by :

  
 Approved Signatory: HO Kin Man, John  
 Manager – Chemistry Department

Date

: 13/6/2014

\*\* End of Report \*\*

Note : This report refers only to the sample(s) tested.