

LILLYDOO GmbH
Hanauer LandstraBe 147-149
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ALLEMAGNE

Comparative study Report N° 1165316A01 v1

2/ Chemical analysis on baby diapers Size 3

3 April 2020

For the attention of **Merle THALER**
LILLYDOO GmbH

Quotation 2019/56558 (DSP 758915)
Reference Chemical analysis on a baby diaper - Budget for annual control 2019

Tested products

LILLYDOO COUCHES 6 A 10 KILOS N°3 X 33

ANGELIQUE MAZURELLE, *Study Manager*

*The copy of this report is only authorized by unabridged edition
This edition includes 15 pages + 1 appendix*

The reported results relate exclusively to the tested samples. The samples will be kept only 2 months from the date of this report. The sample and the information regarding sample have been provided by the client. All information related to the sample are under liability of the client and have not been checked by the Eurofins ATS Company

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S.A.S AU CAPITAL DE 571 200 euros
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1. FOREWORD

The aim of this study is to analyse the chemical substances in baby diapers.

TESTED PRODUCTS:

 **LILLYDOO**
COUCHES 6 A 10 KILOS N°3 X 33
Reference:
Supplier name: LILLYDOO
Batch N°: HBD8 02:03 2020.01.15 023
Barcode N°: 4260442168195
Provided by: LILLYDOO

The study is based on:

-  Thiazolinones (coldwater extraction) - LC-MS/MS - Internal - (JR0ZG)
SOP Reference: Eurofins Consumer Product Testing GmbH
-  Dioxins(17) [envi] materials - GC-MS/MS - Internal - (GFU0A)
SOP Reference: Eurofins GfA
-  Extractable content of 1,2-Benzene dicarboxylic acid, dihexyl ester in materials - GC-MS - CPSC-CH-C1001-09.4 - (AW1FX)
SOP Reference: EUROFINS PRODUCT TESTING A/S
-  Extractable content of 1,2-Benzene dicarboxylic acid, dipentyl ester in materials - GC-MS - CPSC-CH-C1001-09.4 - (AW1G6)
SOP Reference: EUROFINS PRODUCT TESTING A/S
-  Di-C6-C10 alkylphthalates in materials - GC-MS - CPSC-CH-C1001-09.4 - For package PAWWA - (AWW1A)
SOP Reference: EUROFINS PRODUCT TESTING A/S
-  Glyphosate, Glufosinate, AMPA in cotton material - LC-MS/MS - Internal Method - (SFW9Y)
SOP Reference: SOFIA GMBH
-  organotin compounds (8 OTC): environmental material, soil, solids, sludge, liquids - GC-MS - Internal - (GFU61)
SOP Reference: Eurofins GfA
-  VOC-analysis (headspace) - HS-GC-MS - Internal - (J7504)
SOP Reference: Eurofins Consumer Product Testing GmbH

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-  Formaldehyde - Spectrophotometry - §64 LFGB B 82.02-1:1985-06 - (J7004)
SOP Reference: Eurofins Consumer Product Testing GmbH
-  EOX/AOX - (1T3VV)
SOP Reference: INDIKATOR GmbH
-  Extractable content of di-n-octyl phthalate (DNOP) in materials - GC-MS - CPSC-CH-C1001-09.4 - (AWW87)
SOP Reference: EUROFINS PRODUCT TESTING A/S
-  Extractable content of dicyclohexyl phthalate (DCP) in materials - GC-MS - CPSC-CH-C1001-09.4 - (AWW92)
SOP Reference: EUROFINS PRODUCT TESTING A/S
-  Extractable content of diisononyl phthalate (DINP) in materials - GC-MS - CPSC-CH-C1001-09.4 - (AWW88)
SOP Reference: EUROFINS PRODUCT TESTING A/S
-  Extractable content of diisodecyl phthalate (DIDP) in materials - GC-MS - CPSC-CH-C1001-09.3 - (AWW89)
SOP Reference: EUROFINS PRODUCT TESTING A/S
-  Polycyclic Aromatic Hydrocarbons (PAHs) in products - GC-MS - AfPS GS 2014:01 PAK - materials - (JR0EC)
SOP Reference: Eurofins Consumer Product Testing GmbH
-  Polychlorinated biphenyls (PCB) - GC-MS - DIN EN ISO 15318:1999-12 - (J6545)
SOP Reference: Eurofins Consumer Product Testing GmbH
-  Organochlorine Pesticides and Pyrethroids (GC-ECD) - GC-ECD - ASU L 00.00-34:2010-09 - (SP101)
SOP Reference: Eurofins Dr. Specht Laboratorien 11 (Hamburg)
-  Nonylphenol, octylphenol, Nonylphenolmonoethoxylate in Material - extraction / GPC / propylation / GC/MS/MS - (1T3QX)
SOP Reference: PiCA Prüfinstitut Chemische Analytik GmbH
-  Extractable content of diisobutyl phthalate (DIBP) in materials - GC-MS - CPSC-CH-C1001-09.4 - (AWW82)
SOP Reference: EUROFINS PRODUCT TESTING A/S
-  Extractable content of dibutyl phthalate (DBP) in materials - GC-MS - CPSC-CH-C1001-09.4 - (AWW83)
SOP Reference: EUROFINS PRODUCT TESTING A/S
-  Extractable content of di-n-hexyl phthalate (DnHP) in materials - GC-MS - CPSC-CH-C1001-09.4 - (AWW84)
SOP Reference: EUROFINS PRODUCT TESTING A/S

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- ✿ Extractable content of benzylbutyl phthalate (BBP) in materials - GC-MS - CPSC-CH-C1001-09.4 - (AWW85)
SOP Reference: EUROFINS PRODUCT TESTING A/S
- ✿ Extractable content of di(ethylhexyl) phthalate (DEHP) in materials - GC-MS - CPSC-CH-C1001-09.4 - (AWW86)
SOP Reference: EUROFINS PRODUCT TESTING A/S
- ✿ Extractable content of di-n-pentyl phthalate (DNPP) in materials - GC-MS - CPSC-CH-C1001-09.4 - (AWW91)
SOP Reference: EUROFINS PRODUCT TESTING A/S
- ✿ Extractable content of n-pentylisopentyl phthalate (PiPP) in materials - GC-MS - CPSC-CH-C1001-09.4 - (AWW93)
SOP Reference: EUROFINS PRODUCT TESTING A/S
- ✿ Extractable content of diisopentyl phthalate (DIPP) in materials - GC-MS - CPSC-CH-C1001-09.4 - (AWW94)
SOP Reference: EUROFINS PRODUCT TESTING A/S
- ✿ Extractable content of di(2-methoxyethyl) phthalate (DMEP) in materials - GC-MS - CPSC-CH-C1001-09.4 - (AWW95)
SOP Reference: EUROFINS PRODUCT TESTING A/S
- ✿ Extractable content of diisooheptyl phthalate (DIHpP) in materials - GC-MS - CPSC-CH-C1001-09.4 - (AWW96)
SOP Reference: EUROFINS PRODUCT TESTING A/S
- ✿ Extractable content of diheptylnonylundecyl phthalate (DHNUP) in materials - GC-MS - CPSC-CH-C1001-09.4 - (AWW98)
SOP Reference: EUROFINS PRODUCT TESTING A/S
- ✿ Glyoxal (coldwater extraction) - Spectrophotometry - DIN 54603 mod. 2008-08 - (JR0ZK)
SOP Reference: Eurofins Consumer Product Testing GmbH
- ✿ Allergens according to Regulation (EC) No 1223/2009 - GC-MS - Internal - (JR0U4)
SOP Reference: Eurofins Consumer Product Testing GmbH

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2. SYNTHESIS/CONCLUSION

We do not note any detection of the chemicals substances sought.

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3. RESULTS



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CHEMICAL ANALYSIS

Brand Manufacturer Denomination Batch n°	LILLYDOO COUCHES 6 A 10 KILOS N°3 X 33 HBD8 02:03 2020.01.15 023
Thiazolinones (coldwater extraction) - LC-MS/MS - Internal	
1,2-Benzisothiazolin-3-on (BIT) - CAS N°:2634-33-5 µg/dm ²	<0,5
2-Methyl-4-isothiazolin-3-on (MIT) - CAS N°:2682-20-4 µg/dm ²	<0,5
2-Octyl-4-isothiazolin-3-on (OIT) - CAS N°:26530-20-1 µg/dm ²	<0,5
5-Chloro-2-Methyl-4-isothiazolin-3-on (CIT) - CAS N°:26172-55-4 µg/dm ²	<0,5
Dioxins(17) envi materials - GC-MS/MS - Internal	
2,3,7,8-TetraCDD - CAS N°:1746-01-6 pg/g	<0,0922
1,2,3,7,8-PentaCDD - CAS N°:40321-76-4 pg/g	<0,121
1,2,3,4,7,8-HexaCDD - CAS N°:39227-28-6 pg/g	<0,184
1,2,3,6,7,8-HexaCDD - CAS N°:57653-85-7 pg/g	<0,252
1,2,3,7,8,9-HexaCDD - CAS N°:19408-74-3 pg/g	<0,238
1,2,3,4,6,7,8-HeptaCDD - CAS N°:35822-46-9 pg/g	<0,388
OctaCDD - CAS N°:3268-87-9 pg/g	<2,82
2,3,7,8-TetraCDF - CAS N°:51207-31-9 pg/g	<0,252
1,2,3,7,8-PentaCDF - CAS N°:57117-41-6 pg/g	<0,175
2,3,4,7,8-PentaCDF - CAS N°:57117-31-4 pg/g	<0,272
1,2,3,4,7,8-HexaCDF - CAS N°:70648-26-9 pg/g	<0,286
1,2,3,6,7,8-HexaCDF - CAS N°:57117-44-9 pg/g	<0,262
1,2,3,7,8,9-HexaCDF - CAS N°:72918-21-9 pg/g	<0,194
2,3,4,6,7,8-HexaCDF - CAS N°:60851-34-5 pg/g	<0,238
1,2,3,4,6,7,8-HeptaCDF - CAS N°:67562-39-4 pg/g	<0,272
1,2,3,4,7,8,9-HeptaCDF - CAS N°:55673-89-7 pg/g	<0,189
OctaCDF - CAS N°:39001-02-0 pg/g	<0,583
WHO(2005)-PCDD/F TEQ (lower-bound) pg/g	Non détectés
WHO(2005)-PCDD/F TEQ (upper-bound) pg/g	0,501
Glyphosate, Glufosinate, AMPA in cotton material - LC-MS/MS - Internal Method	
Aminomethylphosphonic acid (AMPA) - CAS N°:1066-51-9 ng/1 g	<10
Glufosinate - CAS N°:51276-47-2 ng/1 g	<10
Glyphosate - CAS N°:1071-83-6 ng/1 g	<10
organotin compounds (8 OTC): environmental material, soil, solids, sludge, liquids - GC-MS - Internal	
Monobutyltin (MBT) - CAS N°:78763-54-9 µg/kg	<4,8
Monobutyltin (MBT) - Sn - CAS N°:1118-46-3 µg/kg	<3,3
Dibutyltin (DBT) - CAS N°:818-08-6 µg/kg	<4,8
Dibutyltin (DBT) - Sn - CAS N°:683-18-1 µg/kg	<2,5
Tributyltin (TBT) - CAS N°:688-73-3 µg/kg	<4,8
Tributyltin (TBT) - Sn - CAS N°:1461-22-9 µg/kg	<2,0
Tetrabutyltin (TTBT) - CAS N°:1461-25-2 µg/kg	<4,8
Tetrabutyltin (TTBT) - Sn - CAS N°:1461-25-2 µg/kg	<1,7
Monooctyltin (MOT) - CAS N°:3091-25-6 µg/kg	<4,8
Monooctyltin (MOT) - Sn - CAS N°:3091-25-6 µg/kg	<2,5
Diocetyl tin (DOT) - CAS N°:870-08-6 µg/kg	<4,8
Diocetyl tin (DOT) - Sn - CAS N°:3542-36-7 µg/kg	<1,7
Triphenyltin (TPHT) - CAS N°:76-87-9 µg/kg	<4,8
Triphenyltin (TPHT) - Sn - CAS N°:639-58-7 µg/kg	<1,6
Tricyclohexyltin (TCyT) - CAS N°:13121-70-5 µg/kg	<9,7
Tricyclohexyltin (TCyT) - Sn - CAS N°:3091-32-5 µg/kg	<3,1
Formaldehyde - Spectrophotometry - §64 LFGB B 82.02-1:1985-06	
Formaldehyde - CAS N°:50-00-0 mg/kg	<10
EOX/AOX	
EOX (extractable organic halogens) mg/kg	<2
AOX (adsorbable organic halogens) mg/kg	<0,5
Polychlorinated biphenyls (PCB) - GC-MS - DIN EN ISO 15318:1999-12	
PCB IUPAC - Nr. 18 mg/kg	<0,01
PCB IUPAC 101 - CAS N°:37680-73-2 mg/kg	<0,01
PCB IUPAC 138 - CAS N°:35065-28-2 mg/kg	<0,01
PCB IUPAC 153 - CAS N°:35065-27-1 mg/kg	<0,01
PCB IUPAC 180 - CAS N°:35065-29-3 mg/kg	<0,01
PCB IUPAC 28 - CAS N°:7012-37-5 mg/kg	<0,01
PCB IUPAC 52 - CAS N°:35693-99-3 mg/kg	<0,01

CHEMICAL ANALYSIS

Brand Manufacturer Denomination Batch n°	LILLYDOO COUCHES 6 A 10 KILOS N°3 X 33 HBD8 02:03 2020.01.15 023
VOC-analysis (headspace) - HS-GC-MS - Internal	
Benzene - CAS N°:71-43-2 mg/kg	<0,1
Bromobenzene - CAS N°:108-86-1 mg/kg	<0,1
Bromochloromethane - CAS N°:74-97-5 mg/kg	<0,1
Bromodichloromethane - CAS N°:75-27-4 mg/kg	<0,1
Bromoform - CAS N°:75-25-2 mg/kg	<0,1
2-Chlorotoluene - CAS N°:95-49-8 mg/kg	<0,1
4-Chlorotoluene - CAS N°:106-43-4 mg/kg	<0,1
Dibromochloromethane - CAS N°:124-48-1 mg/kg	<0,1
1,2-Dibromoethane - CAS N°:106-93-4 mg/kg	<0,1
Dibromomethane - CAS N°:74-95-3 mg/kg	<0,1
1,2-Dichlorobenzene (o-) - CAS N°:95-50-1 mg/kg	<0,1
1,3-Dichlorobenzene (m-dichlorobenzene) - CAS N°:541-73-1 mg/kg	<0,1
1,4-Dichlorobenzene (p-) - CAS N°:106-46-7 mg/kg	<0,1
1,1-dichloroethane - CAS N°:75-35-3 mg/kg	<0,1
1,2-Dichloroethane - CAS N°:107-06-2 mg/kg	<0,1
1,1-Dichloroethene - CAS N°:75-35-4 mg/kg	<0,1
cis-Dichloroethene - CAS N°:156-59-2 mg/kg	<0,1
Dichloromethane - CAS N°:75-09-2 mg/kg	<0,1
1,2-Dichloropropane - CAS N°:78-87-5 mg/kg	<0,1
1,3-Dichloropropane - CAS N°:142-28-9 mg/kg	<0,1
2,2-Dichloropropane - CAS N°:594-20-7 mg/kg	<0,1
1,1-Dichloropropene - CAS N°:563-58-6 mg/kg	<0,1
Ethylbenzene - CAS N°:100-41-4 mg/kg	<0,1
Hexachlorobutadiene - CAS N°:87-68-3 mg/kg	<0,1
iso-Propylbenzene - CAS N°:98-82-8 mg/kg	<0,1
Monochlorobenzene - CAS N°:108-90-7 mg/kg	<0,1
Naphthalene - CAS N°:91-20-3 mg/kg	<0,1
n-Butylbenzene - CAS N°:104-51-8 mg/kg	<0,1
n-Propylbenzene - CAS N°:103-65-1 mg/kg	<0,1
p-Isopropyltoluene - CAS N°:99-87-6 mg/kg	<0,1
sec-Butylbenzene - CAS N°:135-98-8 mg/kg	<0,1
tert-Butylbenzene - CAS N°:98-06-6 mg/kg	<0,1
Styrene - CAS N°:100-42-5 mg/kg	<0,1
1,1,2,2-tetrachloroethane - CAS N°:79-34-5 mg/kg	<0,1
1,1,1,2-Tetrachloroethane - CAS N°:630-20-6 mg/kg	<0,1
Tetrachloroethene - CAS N°:127-18-4 mg/kg	<0,1
Tetrachloromethane - CAS N°:56-23-5 mg/kg	<0,1
Toluene - CAS N°:108-88-3 mg/kg	<0,1
trans-Dichloroethene - CAS N°:156-60-5 mg/kg	<0,1
1,2,3-Trichlorobenzene - CAS N°:87-61-6 mg/kg	<0,1
1,2,4-Trichlorobenzene - CAS N°:120-82-1 mg/kg	<0,1
1,1,2-trichloroethane - CAS N°:79-00-5 mg/kg	<0,1
1,1,1-Trichloroethane - CAS N°:71-55-6 mg/kg	<0,1
Trichloroethene - CAS N°:79-01-6 mg/kg	<0,1
Chloroform (Trichloromethane) - CAS N°:67-66-3 mg/kg	<0,1
1,2,3-Trichloropropane - CAS N°:96-18-4 mg/kg	<0,1
1,2,4-Trimethylbenzene - CAS N°:95-63-6 mg/kg	<0,1
1,3,5-Trimethylbenzene (Mesitylene) - CAS N°:108-67-8 mg/kg	<0,1
m- and p- xylene - CAS N°:1330-20-7 mg/kg	<0,1
Xylene (ortho-) - CAS N°:95-47-6 mg/kg	<0,1
TVOC mg/kg	<0,1
Organochlorine Pesticides and Pyrethroids (GC-ECD) - GC-ECD - ASU L 00.00-34:2010-09	
Screened pesticides	Non détectés
Nonylphenol, octylphenol, Nonylphenolmonoethoxylate in Material - extraction / GPC / propylation / GC/MS/MS	
Nonylphenoldiethoxylate - CAS N°:20427-84-3 mg/kg	<5
Nonylphenol Monoethoxylates mg/kg	<5
4-tert-octylphenol - CAS N°:140-66-9 mg/kg	<1
Nonylphenol mixed isomers mg/kg	<5

CHEMICAL ANALYSIS

Brand Manufacturer Denomination Batch n°	LILLYDOO COUCHES 6 A 10 KILOS N°3 X 33 HBD8 02:03 2020.01.15 023
Polycyclic Aromatic Hydrocarbons (PAHs) in products - GC-MS - AfPS GS 2014:01 PAK - materials	
Naphthalene - CAS N°:91-20-3 mg/kg	<0,1
Acenaphthylene - CAS N°:208-96-8 mg/kg	<0,1
Acenaphthene - CAS N°:83-32-9 mg/kg	<0,1
Fluorene - CAS N°:86-73-7 mg/kg	<0,1
Phenanthrene - CAS N°:85-01-8 mg/kg	<0,1
Anthracene - CAS N°:120-12-7 mg/kg	<0,1
Fluoranthene - CAS N°:206-44-0 mg/kg	<0,1
Pyrene - CAS N°:129-00-0 mg/kg	<0,1
Benzo(a)anthracène - CAS N°:56-55-3 mg/kg	<0,1
Chrysene - CAS N°:218-01-9 mg/kg	<0,1
Benzo(b)fluoranthene - CAS N°:205-99-2 mg/kg	<0,1
Benzo-(k)-fluoranthene - CAS N°:207-08-9 mg/kg	<0,1
Benzo-(j)-fluoranthene - CAS N°:205-82-3 mg/kg	<0,1
Benzo(a)pyrene - CAS N°:50-32-8 mg/kg	<0,1
Benzo(e)pyrene - CAS N°:192-97-2 mg/kg	<0,1
Indeno-(1,2,3-cd)-pyrene - CAS N°:193-39-5 mg/kg	<0,1
Dibenzo(a,h)anthracene - CAS N°:53-70-3 mg/kg	<0,1
Benzo(ghi)Perylene - CAS N°:191-24-2 mg/kg	<0,1
Sum 18 PAH mg/kg	<0,2
Extractable content of 1,2-Benzene dicarboxylic acid, dihexyl ester in materials - GC-MS - CPSC-CH-C1001-09.4	
Diisohexylphthalate - CAS N°:68515-50-4 mg/kg	<5
Extractable content of 1,2-Benzene dicarboxylic acid, dipentyl ester in materials - GC-MS - CPSC-CH-C1001-09.4	
Phthalic acid, n-pentyl-isopentyl ester (DPP) - CAS N°:84777-06-0 mg/kg	<5
Di-C6-C10 alkylphthalates in materials - GC-MS - CPSC-CH-C1001-09.4 - For package PAWWA	
C6-C10 Mixed phthalates mg/kg	<50
Extractable content of di-n-octyl phthalate (DNOP) in materials - GC-MS - CPSC-CH-C1001-09.4	
Di-n-octylphthalate (DNOP) - CAS N°:117-84-0 mg/kg	<5
Extractable content of dicyclohexyl phthalate (DCP) in materials - GC-MS - CPSC-CH-C1001-09.4	
Dicyclohexylphthalat - CAS N°:84-61-7 mg/kg	<5
Extractable content of diisononyl phthalate (DINP) in materials - GC-MS - CPSC-CH-C1001-09.4	
Diisononylphthalate (DINP) - CAS N°:68515-48-0 mg/kg	<30
Extractable content of diisodecyl phthalate (DIDP) in materials - GC-MS - CPSC-CH-C1001-09.3	
Diisodecylphthalate (DIDP) - CAS N°:26761-40-0 mg/kg	<30
Extractable content of diisobutyl phthalate (DIBP) in materials - GC-MS - CPSC-CH-C1001-09.4	
Di-isobutyl phthalate (DiBP) - CAS N°:84-69-5 mg/kg	<5
Extractable content of dibutyl phthalate (DBP) in materials - GC-MS - CPSC-CH-C1001-09.4	
Di-n-butylphthalate - CAS N°:84-74-2 mg/kg	<5
Extractable content of di-n-hexyl phthalate (DnHP) in materials - GC-MS - CPSC-CH-C1001-09.4	
Dihexyl phthalate (DHXP) - CAS N°:84-75-3 mg/kg	<5
Extractable content of benzylbutyl phthalate (BBP) in materials - GC-MS - CPSC-CH-C1001-09.4	
Benzyl butyl phthalate - CAS N°:85-68-7 mg/kg	<5
Extractable content of di(ethylhexyl) phthalate (DEHP) in materials - GC-MS - CPSC-CH-C1001-09.4	
Bisethylhexylphthalate - CAS N°:117-81-7 mg/kg	<5
Extractable content of di-n-pentyl phthalate (DNPP) in materials - GC-MS - CPSC-CH-C1001-09.4	
Dipentylphthalate - CAS N°:131-18-0 mg/kg	<5
Extractable content of n-pentylisopentyl phthalate (PiPP) in materials - GC-MS - CPSC-CH-C1001-09.4	
n-Pentylisopentyl phthalate - CAS N°:776297-69-9 mg/kg	<5
Extractable content of diisopentyl phthalate (DIPP) in materials - GC-MS - CPSC-CH-C1001-09.4	
Di-(isopentyl)phthalate (DiPP) - CAS N°:605-50-5 mg/kg	<5
Extractable content of di(2-methoxyethyl) phthalate (DMEP) in materials - GC-MS - CPSC-CH-C1001-09.4	
Di-(2-methoxyethyl)phthalate (DMEP) - CAS N°:117-82-8 mg/kg	<10
Extractable content of diisoeptyl phthalate (DIHP) in materials - GC-MS - CPSC-CH-C1001-09.4	
DiisoHeptylphthalate (DiHP) - CAS N°:41451-28-9 mg/kg	<25
Extractable content of diheptylnonylundecyl phthalate (DHNUP) in materials - GC-MS - CPSC-CH-C1001-09.4	
Heptylnonylundecyl phthalate - CAS N°:68515-42-4 mg/kg	<50
Glyoxal (coldwater extraction) - Spectrophotometry - DIN 54603 mod. 2008-08	
Glyoxal - CAS N°:107-22-2 mg/dm ²	<0,02

CHEMICAL ANALYSIS

Brand Manufacturer Denomination Batch n°	LILLYDOO COUCHES 6 A 10 KILOS N°3 X 33 HBD8 02:03 2020.01.15 023
Allergens according to Regulation (EC) No 1223/2009 - GC-MS - Internal	
Acetylcedrene - CAS N°:32388-55-9 mg/kg	<1
alpha-Terpineol - CAS N°:10482-56-1 mg/kg	<1
Amyl Cinnamal - CAS N°:122-40-7 mg/kg	<1
Amylcinnamylalcohol - CAS N°:101-85-9 mg/kg	<1
Amyl salicylate - CAS N°:2050-08-0 mg/kg	<1
trans-Anethole - CAS N°:4180-23-8 mg/kg	<1
Anise Alcohol - CAS N°:105-13-5 mg/kg	<1
Benzaldehyde - CAS N°:100-52-7 mg/kg	<1
Benzylalcohol - CAS N°:100-51-6 mg/kg	<1
Benzylbenzoate - CAS N°:120-51-4 mg/kg	<1
Benzylcinnamate - CAS N°:103-41-3 mg/kg	<1
Benzylsalicylate - CAS N°:118-58-1 mg/kg	<1
Butylphenyl Methylpropional - CAS N°:80-54-6 mg/kg	<1
Camphor - CAS N°:76-22-2 mg/kg	<1
beta-caryophyllene - CAS N°:87-44-5 mg/kg	<1
Carvone - CAS N°:99-49-0 mg/kg	<1
Cinnamal - CAS N°:104-55-2 mg/kg	<1
Cinnamyl alcohol - CAS N°:104-54-1 mg/kg	<1
Citral - CAS N°:5392-40-5 mg/kg	<1
Citronellol - CAS N°:106-22-9 mg/kg	<1
Coumarin - CAS N°:91-64-5 mg/kg	<1
Rose Ketone-4 - CAS N°:23696-85-7 mg/kg	<1
alpha-Damascone (TMCHB) - CAS N°:23726-94-5 mg/kg	<1
cis-beta-Damascone - CAS N°:23726-92-3 mg/kg	<1
delta-Damascone 5 - CAS N°:7378-68-4 mg/kg	<1
Dimethylbenzyl carbinyol acetate (DMBCA) - CAS N°:151-05-3 mg/kg	<1
Eugenol - CAS N°:97-53-0 mg/kg	<1
Farnesol - CAS N°:4602-84-0 mg/kg	<1
Geraniol - CAS N°:106-24-1 mg/kg	<1
Hexadecanolactone - CAS N°:109-29-5 mg/kg	<1
Hexamethylindanopyran - CAS N°:1222-05-5 mg/kg	<1
Hexylcinnamal - CAS N°:101-86-0 mg/kg	<1
Hydroxyisohexyl 3-Cyclohexene Carboxaldehyde - CAS N°:31906-04-4 mg/kg	<1
Hydroxycitronellal - CAS N°:107-75-5 mg/kg	<1
Isoeugenol - CAS N°:97-54-1 mg/kg	<1
Alpha-Isomethyl Ionone - CAS N°:127-51-5 mg/kg	<1
Limonene (major form) mg/kg	<1
Linalool (major form) - CAS N°:78-70-6 mg/kg	<1
Menthol - CAS N°:1490-04-6 mg/kg	<1
6-Methylcoumarin (Toncarine) - CAS N°:92-48-8 mg/kg	<1
Methyl 2-Octynoate - CAS N°:111-12-6 mg/kg	<1
Methyl salicylate - CAS N°:119-36-8 mg/kg	<1
3-Methyl-5-(2,2,3-Trimethyl-3-cyclopentenyl)pent-4-en-2-ol - CAS N°:67801-20-1 mg/kg	<1
Alpha-pinène - CAS N°:80-56-8 mg/kg	<1
beta-Pinene - CAS N°:127-91-3 mg/kg	<1
Propylidene phthalide - CAS N°:17369-59-4 mg/kg	<1
Salicylaldehyde - CAS N°:90-02-8 mg/kg	<1
Sclareol - CAS N°:515-03-7 mg/kg	<1
Terpineol (mixture of isomers) - CAS N°:8000-41-7 mg/kg	<1
alpha-terpinène - CAS N°:99-86-5 mg/kg	<1
Terpinolene - CAS N°:586-62-9 mg/kg	<1
Tetramethyl acetyloctahydronaphthalenes - CAS N°:54464-57-2 mg/kg	<1
Majantol - CAS N°:103694-68-4 mg/kg	<1
Vanillin - CAS N°:121-33-5 mg/kg	<1
Linalyl acetate - CAS N°:115-95-7 mg/kg	<1
Eugenyl acetate - CAS N°:93-28-7 mg/kg	<1
Isoeugenyl acetate - CAS N°:93-29-8 mg/kg	<1
Geranyl acetate mg/kg	<1
(Z) alpha-santalol - CAS N°:115-71-9 mg/kg	<1
(Z) beta-santalol - CAS N°:77-42-9 mg/kg	<1

4. PROTOCOL DESCRIPTION

Thiazolinones (coldwater extraction) - LC-MS/MS - Internal

Internal method by LC-MS/MS

Dioxins(17) [envi] materials - GC-MS/MS - Internal

The aim of this method is to search and to quantify the dioxins (Polychlorinated dibenzodioxin / PCDD) and furans (Polychlorinated dibenzofuran / PCDF). There are 75 PCDD and 135 PCDF but only 17 are recognized as toxics for man:

Tetrachlorodibenzodioxin, Pentachlorodibenzodioxin, Hexachlorodibenzodioxin (3 conformations), Heptachlorodibenzodioxin, Octachlorodibenzodioxin, Tetrachlorodibenzofuran, Pentachlorodibenzofuran (2 conformations), Hexachlorodibenzofuran (4 conformations), Heptachlorodibenzofuran (2 conformations), Octachlorodibenzofuran..

The extraction of PCDD and PCDF is carried out with toluene (Soxhlet method). The quantification is performed by gas chromatography combined with a mass spectroscopy (high resolution).

The analysis is performed on the whole components of the product (on a mix of the whole product).

Remark:

We will note that the limit of quantification of this analysis depends on the quantity of used product. This quantity can slightly increase if we note the presence of interferences during the analysis, which forces the operator to carry out once again the analysis with more material; the consequence is to have a limit of quantification slightly higher.

Extractable content of phthalates in materials - GC-MS - CPSC-CH-C1001-09.4

Extraction overnight of 2g in dichloromethane. The extract is transferred to a vial for GC-MS analysis. LOQ: (Standard LOQ which may vary depending on matrix and/or quantity of sample analysed).

Benzyl butyl phthalate < 5 mg/kg
Di-(2-methoxyethyl)phthalate(DMEP)< 10 mg/kg
Diethylhexylphthalate (DEHP)<5 mg/kg
Di-n-butylphthalate < 5 mg/kg
Dicyclohexylphthalat* < 5 mg/kg
Diethylphthalate < 5 mg/kg
Heptylnonylundecyl phthalate* < 50 mg/kg
Di-isobutyl phthalate (DiBP) < 5 mg/kg
Diisodecylphthalate (DIDP)* < 30 mg/kg
DiisoHeptylphthalate (DiHP)* < 25 mg/kg
Diisononylphthalate (DINP) < 30 mg/kg
Di-(isopentyl)phthalate (DiPP)* < 5 mg/kg
Dihexyl phthalate (DHXP)* < 5 mg/kg
Di-n-octylphthalate (DNOP) < 5 mg/kg
Dipentylphthalate* < 5 mg/kg
Other phthalates* < 50 mg/kg
Pentylisopentyl phthalate* < 5 mg/kg

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Glyphosate, Glufosinate, AMPA in cotton material - LC-MS/MS - Internal Method

The aim of this method is to search and to quantify the glyphosate (herbicide) and the aminomethylphosphonic acid (principal product of the glyphosate degradation). The method is based on an extraction in an acid aqueous solution. The quantification is by liquid chromatography combined with a mass spectroscopy.

The analysis is performed on the absorbent pad.
LOQ: 10 ng/g

organotin compounds (8 OTC): environmental material, soil, solids, sludge, liquids - GC-MS - Internal

- Extraction of hexane and in-situ-derivatisation with sodiumtetraethylborate
- Addition of internal standard substances to facilitate the extraction
- Washing of the Hexane phase
- Addition of Tetrapentyltin
- Analysis in gas chromatography coupled to a mass spectrometer (GC/MS)
- Quantification of the organotins (internal method)

VOC-analysis (headspace) - HS-GC-MS - Internal

Internal method
Analysis in gas chromatography combined with a mass spectrometer (GC/MS)
LOQ: 0.1 mg/kg

Formaldehyde - Spectrophotometry - §64 LFGB B 82.02-1:1985-06

The aim of this method is to search and quantify the formaldehyde (CMR substance: carcinogenic, mutagenic and reprotoxic). The formaldehyde (or formic aldehyde) is extracted from the product to test with distilled water (at 23°C, during 24h). Then the extracted formaldehyde reacts with acetylacetone and ammonium acetate to create the 3,5-diacetyl-1,4-dihydrolutidine (which is dosed by photometry at 412nm). The final measurement is performed by spectrophotometry.

The analysis is performed on the whole components of the product (on a mix of the whole product).

EOX/AOX

The aim of this method is to search and quantify the organic halogen components (Extractable and Adsorbable: EOX and AOX):

Extractable (EOX): the extraction consists in extracting a part of organic halogen components in 2% sulphuric acid for 8 h at 40 °C. Then, the quantification is carried out by combustion in an oxygen stream coupled to a colorimetric micro detection of the organic halogen components.

Adsorbable (AOX): the extraction is performed by vapor distillation in presence of active carbon. The extracted organic halogens components are captured on the active carbon (containing the organic halogen components) in an oxygen stream coupled with a colorimetric micro detection.

The method of colorimetric micro detection determines the quantity of transformed material during an electrolysis reaction measuring the consumed or produced electricity quantity (in coulombs) (during combustion for example) of organic halogen components.

The analysis is performed on the whole components of the product (on a mix of the whole product).

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Polycyclic Aromatic Hydrocarbons (PAHs) in products - GC-MS - AfPS GS 2014:01 PAK - materials

The aim of this method is to search and to quantify the polycyclic aromatic hydrocarbons (PAHs). The method consists on an extraction of the PAHs with toluene, in an ultrasonic bath, and the quantification is by gas chromatography combined with a mass spectroscopy.

The analysis is performed on the whole of the components of the products (on a mix of the whole product).
LOQ: 0.1mg/kg

Polychlorinated biphenyls (PCB) - GC-MS - DIN EN ISO 15318

This analysis consists in determining the PCBs content of the sample according to EN ISO 15318. The method is by GC-MS. Extraction with ethanoic potassium hydroxide and hexane.

Organochlorine Pesticides and Pyrethroids (GC-ECD) - GC-ECD - ASU L 00.00-34:2010-09

The aim of this method is to search and to quantify the organochlorine pesticides and the pyrethroids (insecticides). These substances are extracted from the product with acetone. Before the extraction, water is added to the sample with a quantity chosen according the natural water content of the sample (during the extraction, the ratio acetone/water has to be constant at 2/1 v/v). For the separation liquid/liquid, sodium chloride and a mix of cyclohexane and ethyl acetate are added to the preparation; the whole is mixed carefully, and then allowed to rest for the separation of the different phases. A determinate part of the organic phase is dried with sodium sulfate then reduced in volume. Identical volumes of ethyl acetate and cyclohexane are added successively to the residue. The residual water is removed by a mix of sodium sulfate and sodium chloride; the solution is then filtered. The extract is purified by chromatography with gel permeation. The obtained eluent goes through a small column of silica gel and is eluted with solvents of increasing polarity. This step is necessary for the determination by gas chromatography using a detector with capture of electrons.

The analysis is performed on the whole of the product components (on a mix of the whole product).
For the LOQ, see appendix.

Nonylphenol, octylphenol, Nonylphenolmonoethoxylate in Material - extraction / GPC / propylation / GC/MS/MS

A representative sampling of the sample is mixed with a standard and extracted with MTBE in an ultrasonic bath. The measurement is performed by GC/MS/MS in MRM mode.

Glyoxal (coldwater extraction) - Spectrophotometry - DIN 54603

Photometric determination of glyoxal by extraction in cold water according to DIN 54603.

Allergens according to Regulation (EC) No 1223/2009 - GC-MS - Internal

The aim of this method is to search and quantify the allergens according to the European regulation 1223/2009. The method is based on extraction of allergens from the product to test with tert-butyl-methyl-ether (inert and not volatile solvent). For identification and quantification of allergens, the liquid is injected directly in a system: gas chromatography coupled with mass spectrometer.

The analysis is performed on the whole components of the product (on a mix of the whole product).

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5. APPENDIX



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