

Test Report

KE/2019/10807

Date : Jan 23, 2019

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FORMOSA PLASTICS CORPORATION
NO. 100, SHUI-GUAN RD., JEN-WU DIST.,
KAOHSIUNG CITY, TAIWAN (R.O.C.)

The following sample(s) was / were submitted and identified on behalf of the client as :

Product Name : PVC Powder
Color : White
Style / Item No. : JWB-57C
Material Composition : PVC Powder
Sample Submitted By : Formosa Plastics Corporation
Date of Sample Received : Jan 10, 2019
Testing Period : Jan 10, 2019 ~ Jan 23, 2019

Test Requested : As requested by client, the test is performed according to:
- Eighty-five (85) substances in the Chemical of High Concern to Children (CHCC) list amended on September 29, 2017 published in Chapter 173-334 Washington Administrative Code (WAC) Children's Safe Products – Reporting Rule.

Test Result(s) : Please refer to next page(s).

Summary :

According to the specified scope and analytical techniques, CHCC as contaminants are \leq 100ppm in each material group of the submitted sample.	PASS
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Ray Chang
Ray Chang Ph.D. / Manager - Tech
 Signed for and on behalf of
SGS Taiwan Limited
Chemical Laboratory-Kaohsiung



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Remark:

1. In accordance with Chapter 173-334-080 WAC Children's Safe Product Act – Reporting Rule, each chemical on the CHCC list that is a contaminant present in a product component must be reported at any concentration above 100 ppm. The notice requirement for CHCC will be phased in as provided in the schedule set out in subsection (2) of WAC 173-334-110.

<http://apps.leg.wa.gov/WAC/default.aspx?cite=173-334-110> (Schedule of notice requirement)

2. For a CHCC that is intentionally added to the product component, client is suggested to identify the exact concentration of the CHCC at practical quantification limit (PQL) by requesting quantitative analysis from the laboratory.

http://www.ecy.wa.gov/programs/swfa/cspa/pdf/cspaguide_pql.pdf (Reporting Guidance – Practical Quantification Limits (PQLs))

3. The chemical analysis of CHCC is performed by means of currently available analytical techniques against the CHCC list amended on September 29, 2017. The list is evaluated by Department of Ecology and may subject to change in the future.

<http://www.ecy.wa.gov/programs/hwtr/RTT/cspa/chcc.html> (Reporting List of CHCC)

4. Test results in this report are based on the tested sample.

Test Sample:

Material Group	Test Component	Component Description
A	1	White PVC Powder

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Test Result:

Formaldehyde and Acetaldehyde

Method: With reference to ISO 17226-1. Analysis was performed by HPLC-DAD.

Test Item (CAS No.)		Concentration (ppm)		MDL (ppm)
		1		
Formaldehyde	(50-00-0)	ND		3
Acetaldehyde	(75-07-0)	ND		3
Comment		PASS		--

AZO dyes

Method: With reference to EN 14362-1:2012 – Analysis was performed by GC-MS/HPLC-DAD.

Test Item (CAS No.)		Concentration (ppm)		MDL (ppm)
		1		
Aniline	(62-53-3)	ND		5
2-Aminotoluene	(95-53-4)	ND		5
2,4-Diaminotoluene	(95-80-7)	ND		5
para-Chloroaniline	(106-47-8)	ND		5
3,3'-Dimethylbenzidine and Dyes Metabolized to 3,3'-Dimethylbenzidine	(119-93-7)	ND		5
Comment		PASS		--

VOC

Method: With reference to USEPA 5021. Analysis was performed by Headspace GC-MS.

Test Item (CAS No.)		Concentration (ppm)		MDL (ppm)
		1		
Benzene	(71-43-2)	ND		1
Vinyl chloride	(75-01-4)	ND		1
Methylene chloride	(75-09-2)	ND		1
1,1,2,2-Tetrachloroethane	(79-34-5)	ND		1
Ethylbenzene	(100-41-4)	ND		1
Styrene	(100-42-5)	ND		1
Toluene	(108-88-3)	ND		1
Phenol	(108-95-2)	ND		1
Perchloroethylene	(127-18-4)	ND		1
N-Methylpyrrolidone	(872-50-4)	ND		1
Carbon disulfide	(75-15-0)	ND		1

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Test Item (CAS No.)		Concentration (ppm)		MDL (ppm)
		1		
Methyl ethyl ketone	(78-93-3)	ND		1
Hexachlorobutadiene	(87-68-3)	ND		1
Acrylonitrile	(107-13-1)	ND		1
1,4-Dioxane	(123-91-1)	ND		1
Comment		PASS		--

Phthalates

Method: With reference to EN 14372. Analysis was performed by GC-MS.

Test Item (CAS No.)		Concentration (ppm)		MDL (ppm)
		1		
Diethyl phthalate	(84-66-2)	ND		30
Dibutyl phthalate	(84-74-2)	ND		30
Di-n-Hexyl Phthalate	(84-75-3)	ND		30
Benzyl butyl phthalate	(85-68-7)	ND		30
Bis(2-ethylhexyl) phthalate	(117-81-7)	ND		30
Di-n-octyl phthalate	(117-84-0)	ND		30
Diisodecyl phthalate	(26761-40-0)	ND		100
Diisononyl phthalate	(28553-12-0)	ND		100
Dicyclohexyl phthalate	(84-61-7)	ND		30
Diisobutyl phthalate	(84-69-5)	ND		30
Di-(2-methoxyethyl) phthalate	(117-82-8)	ND		30
Dipentyl phthalate	(131-18-0)	ND		30
Comment		PASS		--

Preservation

Method: Solvent Extraction – Analysis was performed by HPLC/DAD, GC-MS.

Test Item (CAS No.)		Concentration (ppm)		MDL (ppm)
		1		
Propyl paraben	(94-13-3)	ND		10
Butyl paraben	(94-26-8)	ND		10
Methyl paraben	(99-76-3)	ND		10
p-Hydroxybenzoic acid	(99-96-7)	ND		10
Ethyl paraben	(120-47-8)	ND		10
Benzophenone-2	(131-55-5)	ND		10
2-Ethyl-hexyl-4-methoxycinnamate	(5466-77-3)	ND		10
2-Ethylhexanoic Acid	(149-57-5)	ND		5
Comment		PASS		--

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Heavy Metals

Method: With reference to USEPA 3052 –Analysis was performed by ICP-OES.

Test Item (CAS No.)		Concentration (ppm)	MDL (ppm)
		1	
Mercury	(7439-97-6)	ND	2
Antimony	(7440-36-0)	ND	2
Arsenic	(7440-38-2)	ND	2
Cobalt	(7440-48-4)	ND	2
Cadmium	(7440-43-9)	ND	2
Comment		PASS	--

Perfluorooctanyl sulphonic acid and its salts; PFOS

Method: Solvent Extraction – Analysis was performed by HPLC-MS-MS.

Test Item (CAS No.)		Concentration (ppm)	MDL (ppm)
		1	
PFOS	(1763-23-1)	ND	10
Comment		PASS	--

Perfluorooctanoic acid (PFOA) and related substances

Method: Solvent Extraction – Analysis was performed by HPLC-MS-MS.

Test Item (CAS No.)		Concentration (ppm)	MDL (ppm)
		1	
PFOA	(335-67-1)	ND	10
Comment		PASS	--

Phenols

Method: Solvent Extraction – Analysis was performed by HPLC-MS.

Test Item (CAS No.)		Concentration (ppm)	MDL (ppm)
		1	
4-Nonylphenol	(104-40-5)	ND	10
Nonylphenol	(25154-52-3)	81.2	10
4-Nonylphenol branched	(84852-15-3)	81.2	10
4-tert-Octylphenol	(140-66-9)	ND	10
4-octyl phenol	(1806-26-4)	ND	10
Comment		PASS	--

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Flame Retardants

Method: Solvent Extraction – Analysis was performed by GC-MS and LC-MS.

Test Item (CAS No.)		Concentration (ppm)	MDL (ppm)
		1	
Hexabromocyclododecane	(25637-99-4)	ND	20
2,2',3,3',4,4',5,5',6,6'-Decabromodiphenyl ether	(1163-19-5)	ND	20
Tetrabromobisphenol A	(79-94-7)	ND	20
Tris(2-chloroethyl) phosphate	(115-96-8)	ND	20
Tris(1,3-dichloro-2propyl) phosphate	(13674-87-8)	ND	20
Triphenyl phosphate (TPP)	(115-86-6)	ND	20
Tris (2,3-dibromopropyl) phosphate (TDBPP)	(126-72-7)	ND	20
Tri-n-butyl phosphate (TNBP)	(126-73-8)	ND	20
Ethylhexyl diphenyl phosphate (EHDPP)	(1241-94-7)	ND	20
Tricresyl phosphate (TCP)	(1330-78-5)	ND	20
Tris (1-chloro-2-propyl) phosphate (TCPP)	(13674-84-5)	ND	20
Bis (2-ethylhexyl) tetrabromophthalate (TBPH)	(26040-51-7)	ND	20
Bis(chloromethyl)propane-1,3-diyl tetrakis-(2-chloroethyl) bis(phosphate) (V6)	(38051-10-4)	ND	20
Isopropylated triphenyl phosphate (IPTPP)	(68937-41-7)	ND	20
Decabromodiphenyl ethane (DBDPE)	(84852-53-9)	ND	20
2-ethylhexyl-2,3,4,5-tetrabromobenzoate (TBB)	(183658-27-7)	ND	20
Comment		PASS	--

N-nitrosamines

Method: With reference to GB/T 24153. Analysis was performed by GC-MS.

Test Item (CAS No.)		Concentration (ppm)	MDL (ppm)
		1	
N-Nitrosodimethylamine	(62-75-9)	ND	0.5
N-Nitrosodiphenylamine	(86-30-6)	ND	0.5
Comment		PASS	--

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Glycol ethers

Method: Solvent Extraction – Analysis was performed by GC-MS.

Test Item (CAS No.)		Concentration (ppm)		MDL (ppm)
		1		
2-Methoxyethanol	(109-86-4)	ND		10
Ethylene glycol monoethyl ester	(110-80-5)	ND		10
Ethylene glycol	(107-21-1)	ND		10
Comment		PASS		--

Estragole

Method: Solvent Extraction – Analysis was performed by GC-MS.

Test Item (CAS No.)		Concentration (ppm)		MDL (ppm)
		1		
Estragole	(140-67-0)	ND		10
Comment		PASS		--

Bisphenol

Method: Solvent Extraction – Analysis was performed by HPLC-MS-MS.

Test Item (CAS No.)		Concentration (ppm)		MDL (ppm)
		1		
Bisphenol A	(80-05-7)	ND		1
Bisphenol S	(80-09-1)	ND		1
Bisphenol F	(620-92-8)	ND		1
Comment		PASS		--

Chloroorganic carriers

Method: With reference to DIN 54232. Analysis was performed by GC-MS.

Test Item (CAS No.)		Concentration (ppm)		MDL (ppm)
		1		
Hexachlorobenzene	(118-74-1)	ND		0.1
Pentachlorobenzene	(608-93-5)	ND		0.1
Comment		PASS		--

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C.I. Solvent Yellow 14

Method: With reference to DIN 54231. Analysis was performed by LC-MS.

Test Item (CAS No.)		Concentration (ppm)		MDL (ppm)
		1		
C.I. Solvent Yellow 14	(842-07-9)	ND		15
Comment		PASS		--

Butylated hydroxyanisole

Method: With reference to ASTM D4275. Analysis was performed by GC-MS.

Test Item (CAS No.)		Concentration (ppm)		MDL (ppm)
		1		
Butylated hydroxyanisole	(25013-16-5)	ND		1
Comment		PASS		--

Chlorinated paraffins

Method: Solvent Extraction – Analysis was conducted by GC-NCI-MS / GC-ECD.

Test Item (CAS No.)		Concentration (ppm)		MDL (ppm)
		1		
Short-chain chlorinated paraffins (SCCP)	(85535-84-8)	ND		50
Chlorinated paraffins	(108171-26-2)	ND		50
Comment		PASS		--

Note:

1. MDL = Method detection limit.
2. Regulatory limit: 100 ppm (mg/kg) for each CHCC as contaminant.
3. ND = Not Detected (lower than MDL).

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Sample photo:

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