

# Test Report

KE/2019/10797

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-57  
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](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
<b>Comment</b>		<b>PASS</b>		--

### 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
<b>Comment</b>		<b>PASS</b>		--

### 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
<b>Comment</b>		<b>PASS</b>		--

## 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
<b>Comment</b>		<b>PASS</b>		--

## 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
<b>Comment</b>		<b>PASS</b>		--

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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
<b>Comment</b>		<b>PASS</b>		--

## 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
<b>Comment</b>		<b>PASS</b>		--

## 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
<b>Comment</b>		<b>PASS</b>		--

## 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)	94.0		10
4-Nonylphenol branched	(84852-15-3)	94.0		10
4-tert-Octylphenol	(140-66-9)	ND		10
4-octyl phenol	(1806-26-4)	ND		10
<b>Comment</b>		<b>PASS</b>		--

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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
<b>Comment</b>		<b>PASS</b>	--

## 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
<b>Comment</b>		<b>PASS</b>	--

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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
<b>Comment</b>		<b>PASS</b>		--

## 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
<b>Comment</b>		<b>PASS</b>		--

## 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
<b>Comment</b>		<b>PASS</b>		--

## 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
<b>Comment</b>		<b>PASS</b>		--

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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
<b>Comment</b>		<b>PASS</b>		--

## 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
<b>Comment</b>		<b>PASS</b>		--

## 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
<b>Comment</b>		<b>PASS</b>		--

### 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).



## Test Report

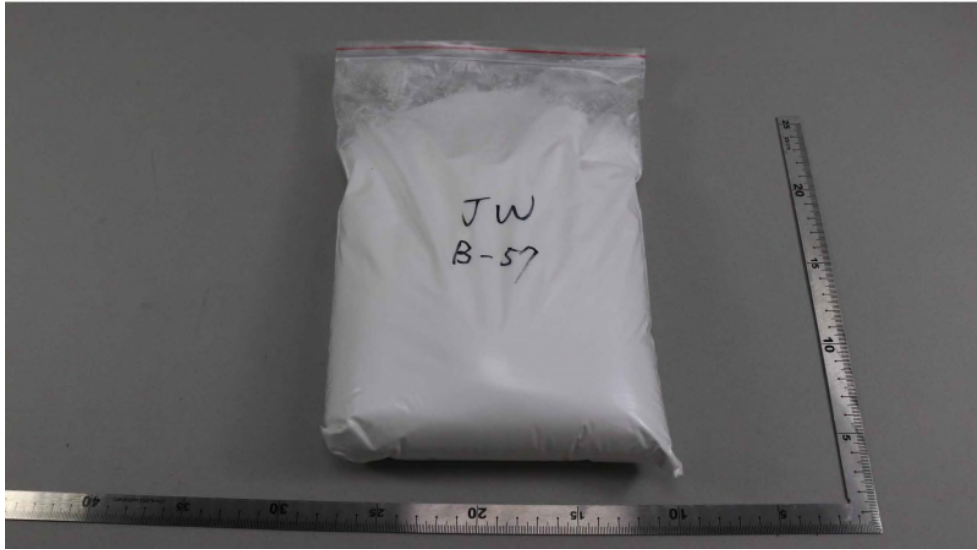
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Sample photo:

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