



Chemical
Analysis

Technical Report

Service Order

Page

Laboratory

Nº 6477/21

Nº 2839/21

Nº 1/6



Requirer: BOXFLEX COMPONENTES PARA CALÇADOS LTDA.

Address: Avenida dos Municípios, 101 – Novo Hamburgo – RS.

Date of receipt of sample: 12/14/2021.

Sample characterization: 01 sample of material, identified by the customer as:
"FAMÍLIA ECOFORMA 56 LOTE 146433".

Selection of samples: up to the requirer.

Sampling: up to the laboratory.



TEST	RESULTS				
	Results	MQL	Unit	Method	Evaluation
1 – Polyaromatic Hydrocarbons – PAHs	9.23	0.20	mg/kg	AFPS-GS-2019-01-PAK	Pass
2– Alkylphenols (NP/OP)	<10.0	10.0	mg/kg	ISO 18218-2:2019	Pass
3– Ethoxylates alkylphenols (NPEO/OPEO)	<10.0	10.0	mg/kg	ISO 18218-2:2019	Pass
4 – Residual Solvents	130	10.0	mg/kg	ISO/TS 16189:2013	Pass
5 – Total Lead	<2.0	2.0	mg/kg	CPSC-CH-E1002-08.3 (2012)	Pass
6 – Total Arsenic	<3.5	3.5	mg/kg	BS EN 16711-1:2015	Pass
7 – Total Mercury	<0.10	0.10	mg/kg	BS EN 16711-1:2015	Pass
8 – Total Cadmium	<3.5	3.5	mg/kg	BS EN 16711-1:2015	Pass
9 – Bisfenol A (BPA)	<1.0	1.0	mg/kg	Método AFIRM -Bisfenol A (BPA)	Pass
10 – Phtalates	<50.0	50.0	mg/kg	CPSC-CHC1001-09.4 (2018)	Pass
11 – Organotin	<0.10	0.10	mg/kg	ABNT ISO/TS 16179:2017	Pass

Note 1: Evaluation according to Veja Limits – Maximum Allowed Limits according VEJA Restricted Substances Policy – September/2021.

Note 2: mg/kg = ppm

Note 3: MQL = Method Quantification Limit.

*The results expressed in this current technical report are applied only to the sample tested as received.
This document reproduction could be done only integrally without any alteration.*

Instituto SENAI de Tecnologia em Couro e Meio Ambiente
Rua Gregório de Mattos, 111 – Centro – Estância Velha/RS
(51) 3904-2735 | laboratorios.couro@senairs.org.br | institutossenai.org.br

Phthalates	CAS Number	Results	VEJA Limits (Maximum allowable concentration)	Laboratory Limits (Method quantification limit)
Di-isononylphthalate (DINP)	28553-12-0	<50.0	Total: 1000 ppm 500 ppm (each)	50 ppm (each)
Di-n-octylphthalate (DNOP)	117-84-0	<50.0		
Di(2-ethylhexyl)-phthalate (DEHP)	117-81-7	<50.0		
Diisodecylphthalate (DIDP)	26761-40-0	<50.0		
Butylbenzylphthalate (BBP)	85-68-7	<50.0		
Dibutylphthalate (DBP)	84-74-2	<50.0		
Diisobutylphthalate (DIBP)	84-69-5	<50.0		
Di-n-hexylphthalate (DnHP)	84-75-3	<50.0		
Diethylphthalate (DEP)	84-66-2	<50.0		
Dimethylphthalate (DMP)	131-11-3	<50.0		
Di-n-pentyl phthalate (DPENP)	131-18-0	<50.0		
Dicyclohexyl phthalate (DCHP)	84-61-7	<50.0		
1,2-Benzenedicarboxylic acid, di-C6-8- branched alkyl esters, C7-rich	71888-89-6	<50.0		
Bis(2-methoxyethyl) phthalate	117-82-8	<50.0		
Diisopentyl phthalate (DIPP)	605-50-5	<50.0		
Dipropyl phthalate (DPRP)	131-16-8	<50.0		
Diisooctyl phthalate (DIOP)	27554-26-3	<50.0		
Diisoexyl phthalate (DIHxP)	71850-09-4	<50.0		
Di-hexyl phthalate, branched and linear (DHxP)	68515-50-4	<50.0		
1,2-Benzenedicarboxylic acid, di-C7- 11- branched and linear alkyl esters (DHNUP)	68515-42-4	<50.0		
1,2-Benzenedicarboxylic acid	84777-06-0	<50.0		
1,2-Benzenedicarboxylic acid, di-C6- 10-alkyl esters or mixed decyl and hexyl and octyl diesters with ≥ 0.3% of dihexyl phthalate; 1,2- Benzenedicarboxylic acid, mixed decyl and hexyl and octyl diesters; 1,2-Benzenedicarboxylic acid, di-C6- 10-alkyl esters	68648-93-1 68515-51-5	<50.0		
n-Pentyl-isopentylphthalate (nPIPP)	776297-69-9	<50.0		

The results expressed in this current technical report are applied only to the sample tested as received.
This document reproduction could be done only integrally without any alteration.



Chemical
Analysis
Laboratory

Technical Report
Nº6477/21

Service Order
Nº 2839/21

Page
Nº 3/6



Alkylphenols (AP), Alkylphenol Ethoxylates (APEOs) including all isomers	CAS Number	Results	VEJA Limits (Maximum allowable concentration)	Laboratory Limits (Method quantification limit)
Nonylphenol (NP), mixed isomers	Several	<10.0	Total: 100 ppm	10 ppm (each)
Octylphenol (OP), mixed isomers	Several	<10.0		
Nonylphenol Ethoxylates (NPEOs)	Several	<10.0	Total: 100 ppm	
Octylphenol Ethoxylates (OPEOs)	Several	<10.0		

Bisphenols	CAS Number	Result	VEJA Limits (Maximum allowable concentration)	Laboratory Limits (Method quantification limit)
Bisphenol-A (BPA)	80-05-7	<1.0	1 ppm	1 ppm

Heavy Metals	CAS Number	Results	VEJA Limits (Maximum allowable concentration)	Laboratory Limits (Method quantification limit)
Arsenic (As)	7440-38-2	<3.5	Extracted: 0,1 ppm Total: 10 ppm	Extracted: 0.05 ppm Total: 3.5 ppm Leather: 2.0 ppm
Cadmium (Cd)	7440-43-9	<3.5	Extracted: 0.1 ppm Total: 40 ppm	Extracted: 0.05 ppm Total: 3.5 ppm Leather: 2.0 ppm
Lead (Pb)	7439-92-1	<2.0	Extracted: 0.2 ppm Total: 90 ppm	Extracted: 0.05 ppm Total: 3.5 ppm Leather: 2.0 ppm
Mercury (Hg)	7439-97-6	<0.10	Extracted: 0.02 ppm Total: 0.5 ppm	Extracted: 0.005 ppm Total: 0.10 ppm

The results expressed in this current technical report are applied only to the sample tested as received.
This document reproduction could be done only integrally without any alteration.



Chemical
Analysis
Laboratory

Technical Report
Nº6477/21

Service Order
Nº 2839/21

Page
Nº 4/6



Solvents/Residuals	CAS Number	Results	VEJA Limits (Maximum allowable concentration)	Laboratory Limits (Method quantification limit)
Dimethylformamide (DMFa)	68-12-2	<10.0	500 ppm	10 ppm
Formamide	75-12-7	<10.0	1000 ppm	
Dimethylacetamide (DMAC)	127-19-5	130		
N-Methyl-2-pyrrolidone (NMP)	872-50-4	<10.0		

Organotin Compounds	CAS Number	Results	VEJA Limits (Maximum allowable concentration)	Laboratory Limits (Method quantification limit)
Dibutyltin (DBT)	Several	<0.10	1 ppm (each)	0.10 ppm
Diocetyl tin (DOT)	Several	<0.10		
Monobutyltin (MBT)	Several	<0.10		
Tricyclohexyltin (TCyHT)	Several	<0.10		
Trimethyltin (TMT)	Several	<0.10		
Triocetyl tin (TOT)	Several	<0.10		
Tripropyltin (TPT)	Several	<0.10		
Triphenyltin (TPhT)	Several	<0.10	0.5 ppm	
Tributyltin (TBT)	Several	<0.10	0.1 ppm	

*The results expressed in this current technical report are applied only to the sample tested as received.
This document reproduction could be done only integrally without any alteration.*



Chemical
Analysis
Laboratory

Technical Report
Nº6477/21

Service Order
Nº 2839/21

Page
Nº 5/6



Polycyclic Aromatic Hydrocarbons (PAHs)	CAS Number	Results	VEJA Limits (Maximum allowable concentration)		Laboratory Limits (Method quantification limit)
Acenaphthene	83-32-9	<0.20	No individual restriction	Total: 10 ppm	0.20 ppm
Acenaphthylene	208-96-8	<0.20			
Anthracene	120-12-7	3.21			
Benzo(g,h,i)perylene	191-24-2	<0.20			
Fluorene	86-73-7	<0.20			
Fluoranthene	206-44-0	<0.20			
Indeno(1,2,3-cd) pyrene	193-39-5	<0.20			
Naphthalene	91-20-3	6.02			
Phenanthrene	85-01-8	<0.20			
Pyrene	129-00-0	<0.20			
Benzo(a)anthracene	56-55-3	<0.20	0.5 ppm (each)		
Benzo(a)pyrene	50-32-8	<0.20			
Benzo(b)fluoranthene	205-99-2	<0.20			
Benzo[e]pyrene	192-97-2	<0.20			
Benzo[j]fluoranthene	205-82-3	<0.20			
Benzo(k)fluoranthene	207-08-9	<0.20			
Chrysene	218-01-9	<0.20			
Dibenzo(a,h)anthracene	53-70-3	<0.20			

The results expressed in this current technical report are applied only to the sample tested as received.
This document reproduction could be done only integrally without any alteration.



Chemical
Analysis
Laboratory

Technical Report

Nº6477/21

Service Order

Nº 2839/21

Page

Nº 6/6



EXAMINATION PERFORMED: 12/14/2021 to 01/22/2022.

TRACKING EQUIPMENT USED FOR TEST:

- NI 102 Balance, with calibration certificate RBC 006060/2021 emitted by INSTITUTO SENAI DE INOVAÇÃO EM METALMECÂNICA-CETEMP and valid until 05/2023.

Estância Velha, January 24th, 2022.

Laboratory Technical Manager
Débora Maria Bernardes
CRQ 05402469

Revision 02
BRC

*The results expressed in this current technical report are applied only to the sample tested as received.
This document reproduction could be done only integrally without any alteration.*

Instituto SENAI de Tecnologia em Couro e Meio Ambiente
Rua Gregório de Mattos, 111 – Centro – Estância Velha/RS
(51) 3904-2735 | laboratorios.couro@senairs.org.br | institutossenai.org.br