

Likua Endüstriyel Ambalaj Malz. San ve Tic LTD Sti  
Atabey Cd No: 28 Kat:1 34794 Cekmekoy Istanbul / Turkey

24.11.2017

## Declaration of Compliance (DoC) for Materials and Articles intended to come into contact with Food

### Articles:

1. E-Flex : Easy Flexitank for 20ft dry containers, Datasheet Appendix I
2. H-Flex : Heating applicable E-Flex, Datasheet Appendix II
3. R-Flex 20ft : E-Flex applicable in reefer containers, Datasheet Appendix III
4. R-Flex 40ft : Flexitank for 40ft reefer containers, Datasheet Appendix IV
5. T-Flex : Flexitank for trucks, Datasheet Appendix V
6. K-Flex : Collapsible IBC, Datasheet Appendix VI

### 1° Packaging material description

- Outer layer : Woven polypropylene fabric – 100% pure virgin PP  
Inner layer : Polyethylene liner – 100% pure virgin PE  
Valve : Polypropylene body & butterfly disc + Stainless Steel handle + Rubber gasket

Traceability of the product pursuant to regulation 1935/2004 is guaranteed stating Article Nr, and the Serial Nr.

### 2° Intended food contact

- a) Type of food product
- Suitable for contact with all type of food and beverages that contain less than 24% alcohol.
  - Liquid
  - Specific food (alcoholic below 24% alcohol degree)

*Not suitable for the packing and the transportation of UN classified hazardous cargo.*

- b) Ratio of food contact surface area to volume used to establish the compliance of the materials is  $0,3\text{dm}^2/\text{kg}$ . Inner surface of the flexitank to be in contact with the cargo (no more than 24tons) is  $72\text{m}^2$ .
- c) Foreseen shelf life and storage conditions:

Shelf life is 24 months from the day of production, in a closed area, protected from direct sunlight, rain and humidity. The required temperature for the storage of the empty flexitank is -10oC to +50oC.

d) Max transportation time confirmed:

The maximum transportation time allowed for our flexitanks is 4 months, in ambient temperature between -20 °C to +60 °C.

### 3° Legal compliance

#### a) Europe

#### **The Packaging (essential requirements) Regulations SI 2003/1941**

1. Noxious or Hazardous substances must be minimized in emissions, ash or leakage from incineration or landfill. There are no noxious substances present in polythene and polypropylene.
2. All LiquA products are recoverable through below:
  - Material recycling.
  - Incineration with energy recovery.
3. Heavy metal limits applying to Cadmium, Mercury, Lead and Hexavalent Chromium of 100 parts per million are not exceeded.

All materials used in the construction of our products are fully compliant with the requirements of EC Directive (94/62/EC) on Packing and Packaging Waste. The materials do not contain any Mercury, Cadmium, Lead, or Hexavalent Chromium.

#### **Food Approval Legislation**

Our products are manufactured from materials which conform to the following legislations/regulations:

**USA** FDA regulations 21 CFR 177.1520 Polyolefin's.

**EU** Commission Regulation (EU) No 10/2011 on Plastic Materials and Articles Intended to Come into contact with Food

We hereby confirm that we comply with the requirements according to Regulation (EC) No 1935/2004, Regulation 10/2011/EC and amendments as well as to consumer goods ordinance and to German Food and Feed Code (LFGB) respectively relevant versions.

We hereby declared that our production observes GMP according to Commission Regulation (EC) No 2023/2006 on Good Manufacturing Practice for Materials and Articles Intended to Come into Contact with Food.

## 1 - Overall migration

Applicable EC Regulation 10/2011 beginning January 2016.

Test method TS EN 1186/3-14 for 10% Ethanol, 3% Asetic Acid, 95% Ethyl Alcohol, Iso-Octane

Test Method TS EN 1186-2 for olive oil for polyethylene

<i>Simulants</i>	<i>Time</i>	<i>Temperature</i>	<i>Results (mg/dm<sup>2</sup> or mg/kg for infant foods)</i>
10% Ethanol	10 days	40°C	0,8 mg/dm <sup>2</sup>
3% Asetic Acid	10 days	40°C	<0,1 mg/dm <sup>2</sup>
95% Ethyl Alcohol	10 days	40°C	1,0 mg/dm <sup>2</sup>
Iso-Octane	2 days	20°C	5,5 mg/dm <sup>2</sup>
Olive Oil	10 days	40°C	2,4 mg/dm <sup>2</sup>

## 2 - Specific migration

<i>Contents</i>	<i>CAS NO</i>	<i>Breakdown</i>	<i>Restriction</i>	<i>Criteria</i>	<i>Test Result</i>
Eva Ethylene-vinyl acetate	24937-78-8	Ethylene CAS number 74-85-1	No SML	N/A	N/A
		Vinyl acetate CAS number 108-05-4	12 ppm	60°C olive oil migration <=10 mg/dm <sup>2</sup>	1,1 mg/dm <sup>2</sup> Test Nr: FS10033469
Polyethylene Resin POLY(ETHYLENE-CO-1-OCTENE)	26221-73-8	1-Octene CAS number 111-66-0	15 ppm	60°C olive oil migration <=10 mg/dm <sup>2</sup>	1,1 mg/dm <sup>2</sup> Test Nr: FS10033469
		Ethylene CAS number74- 85-1	No SML	N/A	N/A

## 3 - BPA and Phthalate existence

BPA existence (mg/kg). Test Method TS EN 14372

Analyses Result	Test Result	Limit	Conformity
BisphenolA (mg/kg)	-	< 0,6	OK



Phthalate existence (mg/kg). Test Method TS EN 14372/CPSC-CH-C-1001-09.3

Analyses Result	Test Result	Limit	Conformity
Butyl Benzyl Phthalate (BBP): <50	-	1000	OK
Di(Ethylhexyl) Phthalate (DEHP) : <50	-	1000	OK
Di-Isodecyl Phthalate (DIDP): <50	-	1000	OK
Di-Iso-Nonyl Phthalate (DINP): <50	-	1000	OK
Di-n-octyl Phthalate (DNOP): <50	-	1000	OK

We confirm that all our ingredients are free from ortho-phthalates, BPA and any SVHC (substances of very high concern).

4 – Reach Regulation

Our products are not under the scope of Reach Regulation.

5 - Additives having multiple functions

List of additives that have a double function (e.g. food additive or flavouring and packaging additive):

E Number / FL Number	Name of Additive	PM/REF N° and/or CAS N°
NONE		

6 - Non-listed substances\* and Non- Intentionally-Added-Substances (NIAS)

Name of Substances	CAS N°
NONE	

\* Non-listed substances: substances not included in Union list of Reg.10/2011 but may be present in plastic layers of plastic materials or articles subject to national laws.

7 - Active and Intelligent material

Precise the identity of the active and intelligent materials and articles or the components intended for the manufacture of those materials and articles, or the substances intended for the manufacturing of the components.

Name of Substance	Ref N° and/or CAS N°	Restriction, e.g. SML*
NONE		

## 8 - Recycled plastics:

Specify the type of material and the authorisation number of the recycling process mentioned in the community register of recycling processes (Regulation (EC) 282/2008)

NONE

## 9 – Biocides:

Precise the identity of the active substance and indicate the concerned Product Types (PT). (Regulation (EU) 528/2012)

Name of Substance	CAS N°	Product Type (PT)
NONE		

## 10 – Purity Criteria

Directives 2008/60/EC, 95/45/EC and 2008/84/EC, Regulations (EC) No 1333/2008 and (EC) No 1334/2008 are not applicable.

## 11 – MOSH/MOAH

No mineral oil is used at any stage of production.

## **4° Quality Standards Applied**

All production is designed and controlled as per below quality standards;

- ISO 9001:2008
- ISO 22000:2005
- ISO 14001:2004
- OHSAS 18001:2007



These declarations are based on individual approvals obtained by the suppliers of LiquA's raw material and ingredients. We hereby confirm that risk analysis has been considered to confirm that any design of the compound this declaration refers to is in compliance with the above mentioned regulations and thresholds.

This written declaration has to be renewed by supplier and when substantial changes in production will have impact on the migration, when new scientific data are available or at any update/change in legislation.

Quality Assurance Manager  
Sevinc Özdemir


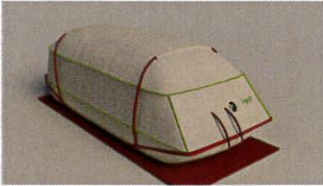
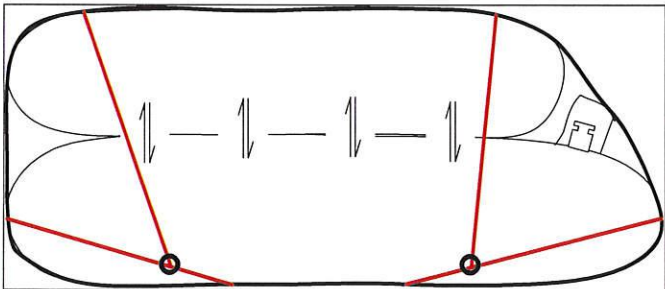
  
**LİKUA ENDÜSTRİYEL**  
AMBALAJ M. Z. SAN. VE TİC. LTD. ŞTİ  
Atabey Cad. No:28 Kat:1  
Çekmece/İSTANBUL 34794  
SARIGAZI V.D. 6080462411

## APPENDIX I


		E-FLEX DATASHEET	
		Article	AC42
		Issue Date	08.08.2017
		Rev. Date	
<b>Product Article Number</b>	:	AC42	
<b>Filling And Discharge</b>	:	BOTTOM	
<b>Dimensions</b>	:	3100 - 6250 mm.	
<b>Valve</b>	:	Valve - 3"	
<b>Capacity</b>	:	16,000 - 27,000 lt	
(Please check tolerances)			
<b><u>E-Flex, Easy Flexitank does NOT require Bulkhead.</u></b>			
<b>Our raw materials are polyethylene, polypropylene and food grade silicon at the gasket of the valve. Please control the compatibility of the cargo with our raw materials.</b>			
			
<b>Outer Cover</b>			
PP Fabric	Average Weight	240 g/m <sup>2</sup>	
	Colour	White	
	Tensile Strength Warp	Dan/ 5 cm 240 Kg (ISO 13934-1)	
	Tensile Strength Weft	Dan/ 5 cm 270 Kg	
	Elongation at break - Weft	12% ±3 (ISO 13934-1)	
	Elongation at break - Warp	14% ±3	
	Density - Weft	48 tapes (/10cm) (ISO 7211/2)	
	Density - Warp	80 tapes (/10cm)	
<b>Valve</b>			
	Type	3" Male Cam-Lock	
	Gasket / O-Ring	Food Grade Silicon	
	Raw material	Polypropylene + Stainless Steel	
Cap	Type	3" screw in	
	Raw material	Polypropylene	
<b>Lashing Belts</b>			
Webbing	Raw Material	Polypropylene Multifilament	
	Average Weight	60 g/lnm	
	Width	55 mm	
	Tensile Strength Warp	2000 Kg (ISO 13934-1)	
	Elongation	18 % (ISO 13934-1)	
<b>Inner Liner</b>			
PE Film	Thickness	125 mic	
	Total Layers	2	
Mechanical Performance	Dart Drop	1800 g (ASTM D1709)	
	Tensile Strength	30 Mpa (MD) (ASTM D882)	
		35 Mpa (TD)	
	Seal Strength	≥30 Mpa (MD) (ASTM D882)	
		≥35 Mpa (TD)	
	Elongation at break	600% (MD) (ASTM D882)	
		650% (TD)	
	Tear Resistance	10 g/µm (MD) (ASTM D1922)	
		22 g/µm (TD)	
	Oxygen Transmission Rate	1800 cm <sup>3</sup> /m <sup>2</sup> /day (23°C;75% RH) (ASTM D3985)	
Water Vapour Transmission Rate	<1 g/m <sup>2</sup> .day (23°C;85% RH) DIN 53122)		
<b>Capacity Tolerance in Volume</b>			
	Minimum Load	16,000 liter	
	Maximum Load	27,000 liter	
<b>Food Approval Legislations</b>			
	FDA	21 CFR 177.1520 Polyolefin's	
	EU	Directive 10/2011 EC	
<b>Min/Max Ambient Temperature</b>			
	Minimum	- 50°C	
	Maximum	+ 80°C	



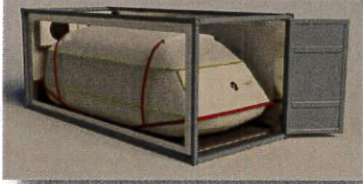
## APPENDIX II

		<b>H-FLEX DATASHEET</b>		Article #	HC41																																																																																																																																					
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<b>Product Article Number</b> : HC41-26 <b>Filling And Discharge</b> : BOTTOM <b>Dimensions</b> : 3100 - 6250 mm. <b>Valve</b> : Valve - 3" <b>Capacity</b> : 26,000 lt (Please check tolerances)																																																																																																																																										
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## APPENDIX III

	<b>R-FLEX 20ft DATASHEET</b>	Article #	RC41
		Issue Date	07.05.2015
		Rev. Date	04.07.2017

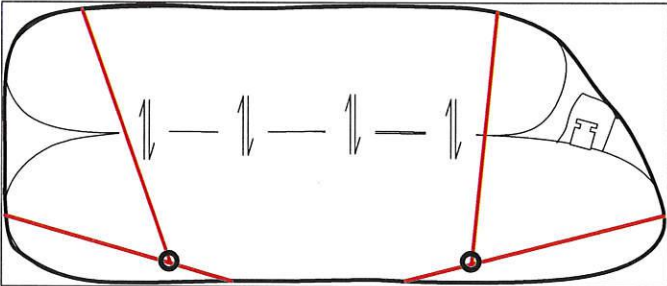
Product Article Number	: RC41-20	
Filling And Discharge	: BOTTOM	
Dimensions	: 2950 - 5750 mm.	
Valve	: Valve - 3"	
Capacity	: 16,000 - 20,000 lt	

**R-Flex, Reefer Flexitank does NOT require Bulkhead.**

Our flexitank is certified according to PAS 1008:2016 norm.


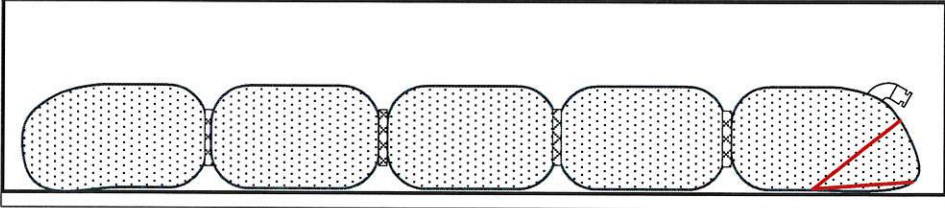
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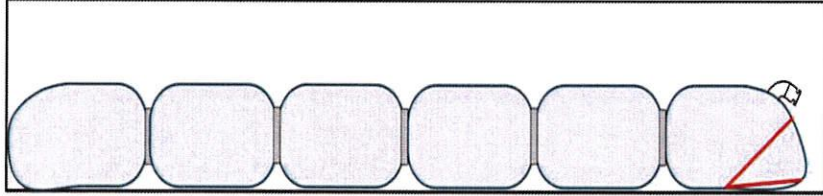
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	Elongation at break - Warp	14% ±3
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<b>Valve</b>		
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	Tensile Strength	30 Mpa (MD) (ASTM D882)
		35 Mpa (TD)
	Seal Strength	≥30 Mpa (MD) (ASTM D882)
		≥35 Mpa (TD)
	Elongation at break	600% (MD) (ASTM D882)
		650% (TD)
	Tear Resistance	10 g/µm (MD) (ASTM D1922)
		22 g/µm (TD)
	Oxygen Transmission Rate	1800 cm <sup>3</sup> /m <sup>2</sup> /day (23°C;75% RH) (ASTM D3985)
Water Vapour Transmission Rate	<1 g/m <sup>2</sup> .day (23°C;85% RH) DIN 53122)	
<b>Capacity Tolerance in Volume</b>		
	Minimum Load	16,000 liter
	Maximum Load	20,000 liter
<b>Food Approval Legislations</b>		
	FDA	21 CFR 177.1520 Polyolefin's
	EU	Directive 10/2011 EC
<b>Min/Max Ambient Temperature</b>		
	Minimum	- 50°C
	Maximum	+ 80°C



## APPENDIX IV

		<b>R-FLEX 40ft DATASHEET</b>		Article	RT01																																																																																																					
				Issue Date	04.07.2017																																																																																																					
				Rev. Date																																																																																																						
<b>Product Article Number</b> : RT01 <b>Dimensions</b> : 3100 - 10700 mm. <b>Valve</b> : Valve - 3" <b>Capacity</b> : 12,000 - 24,000 lt	Our raw materials are polyethylene, polypropylene and food grade silicon at the gasket of the valve. Please control the compatibility of the cargo with our raw materials.																																																																																																									
																																																																																																										
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## APPENDIX V

		<b>T-Flex DATASHEET</b>		Article	TT01																																																																																																				
				Issue Date	02.03.2017																																																																																																				
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<b>Product Article Number</b> : TT01 <b>Dimensions</b> : 3100 - 13450 mm. <b>Valve</b> : Valve - 3" <b>Capacity</b> : 16,000 - 26,000 lt	Our raw materials are polyethylene, polypropylene and food grade silicon at the gasket of the valve. Please control the compatibility of the cargo with our raw materials.																																																																																																								
																																																																																																									
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## APPENDIX VI



#### Design for 20/40ft container

**Product Article Number** : KKB-1000  
**Volume** : 1.000 Lt  
**Safe Working Load** : 1.500 kg  
**Safety Factor** : 5/1 Single trip  
**Filling System** : Top Filling with 500mm long chute  
**Discharging System** : Flat bottom with 2" plastic flange  
**Dimensions Empty** : 1000 x 1000 x 1070mm



**PE Liquid Film + PP Fabric Outer**  
**All Materials are Food Grade**

Materials Used	Specifications	Values
<b>Outer Cover</b>		
PP Fabric	Average Weight	Min 250 g/m <sup>2</sup>
	Laminated	30 g/m <sup>2</sup>
	Colour	White
	Tensile Strength Warp	Min Dan/ 5 cm 240 Kg (ISO 13934-1)
	Tensile Strength Weft	Min Dan/ 5 cm 270 Kg
	Elongation at break - Weft	22% ±3 (ISO 13934-1)
	Elongation at break - Warp	25% ±3
	Density - Weft	48 tapes (/10cm) (ISO 7211/2)
Density - Warp	80 tapes (/10cm)	
<b>Plastic Supports</b>		
	Raw Material	Polypropylene
	Diameter Inner	Ø 32 mm
	Thickness	5.6 mm
	Length	1120 mm
	Impact Resistance Ratio	< 10% (ISO 9854)
	Torsion	1 (EN 713)
<b>Casette Liner Insert</b>		
Mechanical Performance	Raw Material	Polyethylene
	Thickness	90mic
	Dimensions	4000 x 2300mm
	Total Layers	2
	Dart Drop	1600 g (ASTM D1709)
	Tensile Strength	Min 31 Mpa (MD) (ASTM D882) Min 32 Mpa (TD)
	Seal Strength	≥30 Mpa (MD) (ASTM D882) ≥35 Mpa (TD)
	Elongation at break	Min 400% (MD) (ASTM D882) Min 600% (TD)
	Tear Resistance	10 g/µm (MD) (ASTM D1922) 22 g/µm (TD)
	Oxygen Transmission Rate	1800 cm <sup>3</sup> /m <sup>2</sup> /day (23°C;75% RH) (ASTM D3985)
Water Vapour Transmission Rate	<1 g/m <sup>2</sup> .day (23°C;85% RH) DIN 53122)	
<b>Capacity Tolerance in Volume</b>		
	Minimum Load	1,000 litres
	Maximum Load	1,050 litres
<b>Food Approval Legislations</b>		
	FDA	21 CFR 177.1520 Polyolefin's
	EU	Directive 10/2011 EC
<b>Min/Max Ambient Temperature</b>		
	Minimum	- 50°C
	Maximum	+ 80°C