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## Declaration of conformity

### on plastic materials and articles intended to come into contact with food

We declare under our sole responsibility that our products:

#### **Graduated cylinders, PP, with raised scale, item no. 646941 - 653941**

meet the present requirements of the Ordinance on Materials and Articles and Regulation (EC) No 1935/2004<sup>[1]</sup> and Commission Regulation (EU) Nr.10/2011<sup>[2]</sup> in their actual version (inclusive of their amendments), too.

Analyses by an independent, accredited laboratory according to the overall migration limit of the final article validates no overstepping of the regulated limits. Also during the organoleptic tests no negative interaction with the food (change of taste and odor of the food) could be discovered. The testing has been performed according to article 17 and 18 of Commission Regulation (EU) No 10/2011 in conjunction with Annex V. Therefore the above named products comply with the requirements of Commission Regulation (EU) No. 10/2011 and could be used related to the specified limitation of migration limits in contact with food.

According to statements provided by our raw materials supplier we could declare, that the material currently used for production of the above named products, has been manufactured in accordance with the relevant requirements of good manufacturing practice for articles intended to come into contact with food, according to Commission Regulation (EC) No 2023/2006<sup>[3]</sup>.

Unless the raw material used for the production of the above named products contains substances with specified limitation (SML / QM) the defined limiting values according to Commission Regulation (EU) No 10/2011 were observed. The actual version of the Commission Regulation can be downloaded from the Internet at <http://eur-lex.europa.eu> or <http://bfr.bund.de>.

<sup>[1]</sup> OJ L 338, 13.11.2004, p. 4–17

<sup>[2]</sup> OJ L 12, 15.1.2011, p. 1–89

<sup>[3]</sup> OJ L 384, 29.12.2006, p. 75–78

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**Geschäftsführer**

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## 1. Specification for envisaged use or limitations:

### - Kind of food, which could come into contact with the used material:

All types of food (dry, aqueous, sour, alcoholic, fatty) - tested according to table 3 annex III with listed food simulants (1. distilled water or water of equivalent quality or food simulant A (Ethanol 10 Vol.-%); 2. food simulant B (Acetic acid 3 Gew.-%); and 3. food simulant D2 (Any vegetable oil with less than 1 % unsaponifiable matter) - with 95% ethanol and isooctane alternatively according to annex V, chapter 2 paragraph 2.1.3 Conditions of contact when using food simulants.).

### - Kind of food, which should not come into contact with the used material:

- (non)

## 2. Information on the intended field of application:

### - Contact time and contact temperature for using and storing food:

tested according to table 3 annex IV for all kind of food, for 10 days at 40 °C (Isooctane for 2 days at 20 °C) resp. for 10 days at 60 °C - shall cover all storage times at refrigerated and frozen conditions including hot-fill conditions and/or heating up to a temperature  $T$ , between  $70\text{ °C} \leq T \leq 100\text{ °C}$ , for a period of no more than  $t = 120/2^{((T-70)/10)}$  minutes.

## 3. Research results:

### 3.1. Organoleptic test (triangle test, 6 persons) according DIN EN 10955:2004-06

Test conditions: Mineral water after 10 d, at 40 °C

	Intensity	Significance	Limiting value <sup>[4]</sup>	Assessment
Deterioration of smell	0	> 20 %	max. 2.5	<i>passed</i>
Deterioration of taste	0.5	10 %	max. 2.5	<i>passed</i>

Scale of intensity: 0 = imperceptible  
 1 = just discernible  
 2 = discernible  
 3 = clear  
 4 = strong

<sup>[4]</sup> 61<sup>st</sup> Notification of German Federal Institute for Risk Assessment (BfR), Principles for the Evaluation of Food Contact Materials (Bundesgesundheitsblatt 2003, p. 363)

### 3.2. Overall migration

**Test conditions:**

Type of contact: Filling

**Method:**

DIN EN 1186:2002-07

**Simulants used:**

with Acetic acid 3 % for 10 d, at 40 °C by S:V of 1.6 dm<sup>2</sup>:80 ml  
 with Ethanol 10 % for 10 d, at 40 °C by S:V of 1.6 dm<sup>2</sup>:80 ml  
 with Isooctane for 2 d, at 20 °C by S:V of 1.6 dm<sup>2</sup>:80 ml  
 with Ethanol 95 % for 10 d, at 40 °C by S:V of 1.6 dm<sup>2</sup>:80 ml  
 with Olive oil for 10 d, at 40 °C by S:V of 0.3 dm<sup>2</sup>:100 ml  
 permitted limit value: max. 10.0 mg/dm<sup>2</sup> <sup>[5]</sup>.

**1<sup>st</sup> Contact**

Food simulant	Unit	Measurement uncertainty	1. sample	2. sample	3. sample	average
Acetic acid 3 %	mg/dm <sup>2</sup>	10 %	< 1	< 1	< 1	<b>&lt; 1</b>
Ethanol 10 %	mg/dm <sup>2</sup>	10 %	< 1	< 1	< 1	<b>&lt; 1</b>
Isooctane	mg/dm <sup>2</sup>	30 %	3.3	2.3	2.9	<b>2.8</b>
Ethanol 95 %	mg/dm <sup>2</sup>	30 %	< 1	< 1	< 1	<b>&lt; 1.0</b>
Olive oil	mg/dm <sup>2</sup>	30 %	< 4	< 4	< 4	<b>&lt; 4</b>

According to Article 12 of Regulation (EU) No. 10/2011 plastic materials and articles shall not transfer their constituents to food simulants in quantities exceeding 10 milligrams of total constituents released per dm<sup>2</sup> of food contact surface (mg/dm<sup>2</sup>). With regard to manner and extent of the performed overall migration test the limiting value is met by the present sample.

### 3.3. Specific migrations

#### 3.3.1. Metals

##### Test conditions:

Migrate from Acetic acid 3 % for 10 d, at 60 °C by S:V of 0.8 dm<sup>2</sup>:40 ml

##### Method:

DIN EN ISO 17294-2:2014-01

##### 1. Contact

<b>Parameter</b>	<b>Limiting value: max.</b>	<b>Measured value *:</b>	<b>Assessment:</b>
Aluminium	1.0 mg/kg <sup>[5]</sup>	< 0.1 mg/kg	passed
Antimony	0.04 mg/kg <sup>[8]</sup>	< 0.01 mg/kg	passed
Arsenic	0.01 mg/kg <sup>[8]</sup>	< 0.002 mg/kg	passed
Barium	1.0 mg/kg <sup>[6]</sup>	< 0.01 mg/kg	passed
Lead	0.01 mg/kg <sup>[8]</sup>	< 0.002 mg/kg	passed
Cadmium	0.002 mg/kg <sup>[8]</sup>	< 0.001 mg/kg	passed
Chromium	0.01 mg/kg <sup>[8]</sup>	< 0.01 mg/kg	passed
Cobalt	0.05 mg/kg <sup>[6]</sup>	< 0.01 mg/kg	passed
Iron	48.0 mg/kg <sup>[6]</sup>	< 0.1 mg/kg	passed
Copper	5.0 mg/kg <sup>[6]</sup>	< 0.01 mg/kg	passed
Lithium	0.6 mg/kg <sup>[6]</sup>	< 0.01 mg/kg	passed
Manganese	0.6 mg/kg <sup>[6]</sup>	< 0.01 mg/kg	passed
Nickel	0.02 mg/kg <sup>[7]</sup>	< 0.01 mg/kg	passed
Mercury	0.01 mg/kg <sup>[8]</sup>	< 0.001 mg/kg	passed
Zinc	5.0 mg/kg <sup>[5]</sup>	< 0.05 mg/kg	passed
Europium	0.05 mg/kg <sup>[8]</sup>	< 0.01 mg/kg	passed
Gadolinium		< 0.01 mg/kg	passed
Lanthanum		< 0.01 mg/kg	passed
Terbium		< 0.01 mg/kg	passed

\* relative measurement uncertainty 30 %

<sup>[5]</sup> according to Regulation (EU) No 10/2011 adapted by Regulation (EU) 2016/1416 - OJ L 230, 25.8.2016, p. 22–42

<sup>[6]</sup> according to Regulation (EU) No 10/2011 - OJ L 12, 15.1.2011, p. 1–89

<sup>[7]</sup> according to Regulation (EU) No 10/2011 adapted by Regulation (EU) 2017/752 - OJ L 113, 29.4.2017, p. 18–23

<sup>[8]</sup> according to Regulation (EU) No 10/2011 adapted by Regulation (EU) 2020/1245 - OJ L 288, 03.9.2020, S. 1–19

According to information provided by our raw material supplier monomers or additives are used, which are controlled by a specific migration limit:

### 3.3.2. Substance A

**Test conditions:**

*Migrate from Olive oil for 10 d, at 60 °C by S:V of 2.4 dm<sup>2</sup>:120 ml*

<b>Limiting value: max.</b>	<b>Measured value:</b>	<b>Assessment:</b>
<i>&lt; 0.05 mg/kg <sup>[5]</sup></i>	<i>&lt; 0.05 mg/kg</i>	<i>passed</i>

*Method: WEX 796 (GC-MS)*

### 3.4. GC-MS-Overview analysis (NIAS<sup>[6]</sup>-Screening) by means of the EPA Methode 8270D:

#### Test conditions:

Migrate from Ethanol for 10 d, at 60 °C by S:V of 2.4 dm<sup>2</sup>:120 ml

The migrate was analyzed gas chromatographically by means of mass spectrometric detection. For the identification of the signals in the chromatogram a commercial mass spectra library was used. Results are expressed in hexadecane (SVOCs) equivalents and may vary to the real amount. We point out that the mentioned amounts may vary to the real amounts as this is a screening approach.

<b>Non-volatile substancen (SVOCs):</b>		
<b>Substance</b>	<b>CAS</b>	<b>Concentration [mg/kg]</b>
Aliphatic hydrocarbons (C12-C16) ( <b>Sum</b> ) (1)	-	4.00
Aliphatic hydrocarbons (C16+) ( <b>Sum</b> ) (1)	-	0.55
2,4-Di-tert-Benzaldehyde (5)*	157649-16-6	0.01
Glycidyl palmitate (4)	7501-44-2	0.07
Glycidyl stearate (4)	7460-84-6	0.07
Hexadecanoic acid, 2-hydroxy-1-(hydroxymethyl)ethyl ester (4)	23470-00-0	0.23
Octadecanoic acid, 2-hydroxy-1-(hydroxymethyl)ethyl ester (4)	621-61-4	0.21
n-Hexadecanoic acid (Palmitic acid) (4)	57-10-3	0.07
Octadecanoic acid (Stearic acid) (4)	5711-4	0.15
Hexadecanoic acid, ethyl ester (Ethylpalmitate) (4)	628-97-7	0.13
Octadecanoic acid, ethyl ester (Ethylstearate) (4)	111-61-5	0.30
Irgafos 168 (3)	31570-04-4	0.60
Oxidised Irgafos 168 (3)	95906-11-9	0.12
Methyl 3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionate (5)**	6386-38-5	0.02
Not identified alcohol (2)	-	0.08
Not identified compound (2)	-	0.01
Not identified compound containing aromatic ring (2)	-	0.09
Not identified compounds containing oxygen (C12-C16) ( <b>Sum</b> )(2)	-	0.10
Not identified palmitate (4)	-	0.02
Not identified stearate (4)	-	0.05

\* Cramer-Class I: Limiting value: (sTDI) of 0,03 mg/kg b.w./day resulting in a derived SML value of 1,8 mg/kg foodstuff

\*\* Cramer-Class II: Limiting value: (sTDI) of 0,009 mg/kg b.w./ day resulting in a derived SML value of 0,54 mg/kg foodstuff

## **Assessment of NIAS <sup>[6]</sup> screening results**

### *Aliphatic hydrocarbons (1)*

*Aliphatic hydrocarbons were detected during the investigation. Currently, no assessment values for the migration of hydrocarbons exist within the framework of Regulation (EU) 10/2011. As the sample at hand is made of polyolefin plastic, it is possible that the hydrocarbons originate from the plastic material itself.*

### *Not identified compounds (2)*

*According to the type and scope of the investigations carried out, compounds that were not clearly identified were recorded. Since no clear identification is possible based on the mass spectrum, a final evaluation cannot be made at this point.*

### *Irgafos 168, Oxidised Irgafos 168 (3)*

*According to the type and extent of the NVOC-GC-MS analysis carried out, the substances listed above were recorded. Oxidised Irgafos 168 and 2,4-Di-tert-butylphenol may be degradation or reaction products of Irgafos 168. Irgafos 168 is used as an antioxidant in plastics production and is listed in Annex I of Regulation (EU) No 10/2011 without restriction. The risk assessment of these substances should cover the substance itself, relevant impurities and reaction and degradation products foreseeable in the intended use. From this point of view, the concentration in the migrate of the present sample is judged to be unremarkable.*

### *Fatty acid esters, -amides (4)*

*According to the type and extent of the investigations carried out, fatty acid derivatives were detected. According to Regulation (EU) No 10/2011 Annex I, the derivatives detected here (from animal or vegetable oils) with linear or branched, monohydric, primary, saturated, aliphatic alcohols (C 1-C 22) and the amides detected here are listed without a specific migration limit. In view of this, the content recorded here is judged to be inconspicuous.*

<sup>[6]</sup> according to Regulation (EU) No 10/2011 - OJ L 12, 15.1.2011, p. 1-89

### *Other substances (5)*

*According to the type and scope of the investigation carried out, further substances were detected that are not listed in Annex I of Regulation (EU) No. 10/2011, i.e. here the guideline value for non-listed substances of < 0.01 mg/kg (not detectable) should be leading the way within the meaning of this Regulation. In addition, Article 19 of Regulation (EU) No 10/2011 forces, that substances that have been detected and are not included in Annex I to the Union list must be subject to a risk assessment in accordance with scientifically accepted standards.*

*Migration limits for the detected substances do not exist at present, toxicological studies on this substance are also not available to us. We are therefore guided by the classification of substances into Cramer classes based on structural properties. This was done according to the "Threshold of Toxicological Concern" (TTC) concept using the software "Toxtree 2.6.13".*

*The underlying structure of 2,4-Dimethyl-Benzaldehyde, leads to a classification of Cramer Class I, for which an intake of up to 30 µg/kg body weight/day is considered tolerable. Assuming a person weighing 60 kg, this corresponds to a permitted limiting value of 1.8 mg substance/person per day.*

*The underlying structure of Methyl 3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionate, leads to a classification of Cramer Class II, for which an intake of up to 9 µg/kg body weight/day is considered tolerable. Assuming a person weighing 60 kg, this corresponds to a permitted limiting value of 540 µg substance/person per day.*

*Considering all substances, for which a classification into a Cramer class is given, taking into account the different hazard classes, a daily consumption of 3250 ml of food, that has been in contact with the article under similar conditions and has comparable dissolving properties with regard to the substance, will not exceed the limiting values and therefore the content of the other detected substances can be regarded as inconspicuous.*

#### 4. Reference to „Dual-Use-Additives“:

*The raw material do not contain substances also authorised as direct food additives ("Dual use additives") according to Regulation (EG) No 1333/2008 <sup>[9]</sup> in its actual version.*

#### **No functional barrier of plastic material is used.**

To ensure the traceability of the product according to Regulation (EC) No 1935/2004 a date-stamp is used at the product itself or a LOT No. is printed on the product label.

In addition we have to point out that the used raw material is not intended to be used for medical, pharmaceutical or healthcare applications and the manufacturer do not support their use for such applications. This product is neither tested nor represented as suitable for medical or pharmaceutical uses by us. It is in the scope of the end-user to validate the product for applications which differs from the guidelines of the Commission Regulation (EU) No 10/2011.

VITLAB GmbH

Grossostheim, 5 Mai 2022



Wolfgang Nicolaus

Geschäftsführer  
Managing Director



i.A. Dr. Stephan Schmidt

Beauftragter Product Compliance  
Regulatory Affairs

<sup>[9]</sup> according to Regulation (EU) No 1333/2008 - OJ L 354, 31.12.2008, p. 16–33