

**Balkan Cables Hellas Ltd.**  
Aggelos Papakonstantinou  
Thesi Ferthi – Zevgolatio Korinthias

Gr - 20001 Korinthos  
Greece

Fürth, 2016-09-13  
Update: 2016-10-05

## Test report No. FUHLP2016-10404-E3

### Testing of a material sample according to the RoHS directive 2011/65/EC

(This test report replaces invariably the test report FUHLP2016-10404E from 2016-09-13 and FUHLP2016-10404E2 from 2016-09-30)

**Sample description:** PVC Granules for several types of cables:  
NYA HO7V-U/R; NYM AO5VV-U; NYL HO3VV-F;  
NYL HO5VV-F; NYY E1VV-U

Arrival in lab: 2016-08-08; Period of XRF analysis incl. sample preparation and photo documentation: 2016-08-08 – 2016-08-08  
Period of additional wet chemical tests resp. reorder: 2016-08-30 – 2016-09-13  
Head of Inorganic Lab: Claudia List

Copying this test report is permitted only in agreement with the contracted lab. The test results refer only to the tested item.  
This report consists of 4 page(s).  
The test methods signed with \* are not listed in the attachment of the accreditation certificate.

As declared by the client, following articles are identical:

PRODUCT'S CODE: NYA=HO7V-U, HO7V-R; YY E1VV-U; NYFAZ HO3VH-H; NYAF HO7V-K; NYL HO3VV-F; NYL HO5VV-F;  
NYM=AO5VV-U; NYIFY=AO5VVHO3-U

This is not verified by the lab.

### Conclusion based on tested item

| Test order   | Status            |
|--|-------------------|
| testing according to the RoHS directive 2011/65/EC | pass <sup>o</sup> |

<sup>o</sup> Please see overview of the test result.

- Test results see next pages -

**Sample description:** PVC Granules for types of cables:  
 NYA HO7V-U/R; NYM AO5VV-U; NYL HO3VV-F;  
 NYL HO5VV-F; NYY E1VV-U

nM = non Metal  
 M = Metal  
 cM = composite Material

**List of component parts:**

| Sample No.      | Part No. | Material | Description |
|-----------------|----------|----------|-------------|
| <b>Granules</b> |          |          |             |
| 625167          | 1        | nM       | PVC Black   |
| 625168          | 2        | nM       | PVC Natural |
| 625169          | 3        | nM       | PVC White   |

**Photos:**



**Sample No.**  
 625167-169  
**Part No. 1 - 3**



**Sample No.**  
 625167  
**Part No. 1**



**Sample No.**  
 625168  
**Part No. 2**



**Sample No.**  
 625169  
**Part No. 3**

**Sample description:** PVC Granules for types of cables:  
 NYA HO7V-U/R; NYM AO5VV-U; NYL HO3VV-F;  
 NYL HO5VV-F; NYY E1VV-U

**Comment**

- LOD = Limit of Detection
- BL = Below Limit
- OL = Over Limit
- X = Inconclusive, further test necessary
- $\sigma$  = Standard deviation
  
- CS = Composite sample

Remark:

Results were obtained by EDXRF for primary screening. Additional chemical testing using ICP (for Cd, Pb), AAS (for Hg), IC-UC/VIS (for CrVI) and GC/MS (for PBBs/PBDEs) are recommended, if the concentration exceeds the below warning value according to IEC 62321.

| Element | Unit    | non - metal  | metal  |
|---------|---------|--|--|
| Cd      | mg / kg | $BL \leq (70-3\sigma) < X < (130+3\sigma) \leq OL$   | $BL \leq (70-3\sigma) < X < (130+3\sigma) \leq OL$   |
| Pb      | mg / kg | $BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$ | $BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$ |
| Hg      | mg / kg | $BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$ | $BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$ |
| Br      | mg / kg | $BL \leq (300-3\sigma) < X$                          | --   |
| Cr      | mg / kg | $BL \leq (700-3\sigma) < X$                          | $BL \leq (700-3\sigma) < X$                          |

| Element | Unit    | composite material                                   |
|---------|---------|--|
| Cd      | mg / kg | $LOD < X < (150+3\sigma) \leq OL$                    |
| Pb      | mg / kg | $BL \leq (500-3\sigma) < X < (1500+3\sigma) \leq OL$ |
| Hg      | mg / kg | $BL \leq (500-3\sigma) < X < (1500+3\sigma) \leq OL$ |
| Br      | mg / kg | $BL \leq (250-3\sigma) < X$                          |
| Cr      | mg / kg | $BL \leq (500-3\sigma) < X$                          |

**Sample description:** PVC Granules for types of cables:  
 NYA HO7V-U/R; NYM AO5VV-U; NYL HO3VV-F;  
 NYL HO5VV-F; NYY E1VV-U

### 1. XRF screening

Method: XRF according to IEC 62321-3-1:2013-06\*

| Sample No. | Part No. | Pb | Hg | Cd | Cr <sub>total</sub> | Br | Status |
|------------|----------|----|----|----|---------------------|----|--------|
| 625167     | 1        | BL | BL | BL | BL                  | BL | pass   |
| 625168     | 2        | BL | BL | BL | BL                  | BL | pass   |
| 625169     | 3        | BL | BL | BL | BL                  | BL | pass   |

### 2. Phthalates in mg/kg

Method: PV\_C\_01.15.02\_07-06 (2014-02)

Limit of quantification: 50 mg/kg

| Parameter                   | Abbrev. | CAS-No.  | 625167<br>Part No. 1 | 625168<br>Part No. 2 | 625169<br>Part No. 3 |
|-----------------------------|---------|----------|----------------------|----------------------|----------------------|
| Diisobutylphthalate         | DIBP    | 84-69-5  | <50                  | <50                  | <50                  |
| Dibutylphthalate            | DBP     | 84-74-2  | <50                  | <50                  | <50                  |
| Benzylbutylphthalate        | BBP     | 85-68-7  | <50                  | <50                  | <50                  |
| Bis-(2-ethylhexyl)phthalate | DEHP    | 117-81-7 | <50                  | <50                  | <50                  |

### Comment:

| Elements                              | RoHS-limit value |
|---------------------------------------|------------------|
| Lead (Pb)                             | 1000 mg/kg       |
| Mercury (Hg)                          | 1000 mg/kg       |
| Cadmium (Cd)                          | 100 mg/kg        |
| Chromium VI (Cr VI)                   | 1000 mg/kg       |
| Polybrominated Biphenyle (PBBs)       | 1000 mg/kg       |
| Polybrominated Diphenyl ether (PBDEs) | 1000 mg/kg       |
| Phthalates (effective 2019)           | 1000 mg/kg       |

Intertek Consumer Goods GmbH



Prüfleitung / Lab Manager

A. Breunig,  K. Grönhardt,  Dr. K. Laue-Schuler,  C. List,  D. Löw  
 R. Micolay,  M. Neumeister,  Dr. R. Rätze,  K. Scharrer,  M. Tutsch