

## Test Report

No. 4518519-01

Date: 26/APR/2018

Page 1 of 6

mtm plastics GmbH  
 Ms. Anja Meyer  
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 99759 Niedergerbra  
 GERMANY



### The following samples were submitted and identified by/on behalf of the client as

SGS Job file : 4518519  
 Order date : 04/APR/2018  
 Order number : -  
 Sample receiving Date : 09/APR/2018  
 Sampling : by Client or by a third party acting at the Client's direction  
 condition of the samples : appropriate for testing  
 Testing period : 09/APR/2018 – 26/APR/2018  
 Analytical scope : According to client's requirements

Sample No	Sample designation
180337882	Dipolen S grey, plastic granules

Test requested : In accordance with the RoHS Directive 2011/65/EU and subsequent amendments

Test Method(s)

- (1) Determination of Cadmium by ICP-OES, acc. IEC 62321-5:2013
- (2) Determination of Lead by ICP-OES, acc. IEC 62321-5:2013
- (3) Determination of Mercury by CV-AAS, acc. IEC 62321-4:2013
- (4) Determination of Chromium by ICP-OES, acc. IEC 62321-5:2013
- (5) Determination of Chromium (VI) acc. IEC 62321:
  - A) (metal samples) Determination after extraction with hot water and derivatisation with 1,5-diphenyl-carbazide based on IEC 62321-7-1:2015 (metal samples), ion chromatography
  - B) (non-metallic samples) Determination after alkaline extraction and derivatisation with 1,5-diphenyl-carbazide based on IEC 62321, Ed1, 2008, C5 (polymer and electronic samples), ion chromatography

*Remark: Due to its highly reactive nature the concentration of CrVI in a corrosion-protection changes drastically with time and storage conditions. The results obtained by IEC 62321-7-1:2015 can therefore only give an indication of the presence/absence of Cr(VI) within the limitations of the method at the time of testing.*
- (6) Determination of PBB/PBDE by GC/MS, acc. IEC 62321-6:2015  
*Remark: Please note that acc. to IEC the testing of metals for PBB/PBDE is gratuitous*
- (7) Determination of Phthalates by GC/MS  
 In-house method, GC-MS after extraction with toluene

Test Result(s) : Please refer to next page(s)

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## Test Report

No. 4518519-01

Date: 26/APR/2018

Page 2 of 6

mtm plastics GmbH  
 Bahnhofstraße 106  
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Conclusion : Based on the performed tests on submitted sample(s), the test results of Lead, Mercury, Cadmium, hexavalent Chromium, Polybrominated Biphenyls(PBB) and Polybrominated Diphenyl Ethers (PBDE) **comply with** the limits as set by RoHS Directive 2011/65/EU, Annex 2 and subsequent amendments

Note: Sample contains traces of cadmium and lead. Conclusion is valid on condition that sample material is homogenous

Based on the performed tests on submitted sample(s), the test results of Bis(2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP), and Diisobutyl phthalate (DIBP) **comply with** the limits as set by Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

Signed for and on behalf of

**SGS INSTITUT FRESENIUS GmbH**

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## Test Report

No. 4518519-01

Date: 26/APR/2018

Page 3 of 6

mtm plastics GmbH  
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### Test results by chemical method (Unit: mg/kg)

Sample No.		180337882		
Test Item(s):	Method (refer to)		RL	RoHS Limit
Cadmium(Cd)	(1)	3,0	1	100
Lead (Pb)	(2)	13	10	1000
Mercury (Hg)	(3)	n.d.	0,5	1000
Chromium, hexavalent (Cr(VI))	(5 B)	n.d.	1	1000
<b>Sum of PBDEs</b>	(6)	-	-	1000 (Sum of polybrominated diphenyl ether)
Monobromodiphenyl ether		n.d.	50	
Dibromodiphenyl ether		n.d.	50	
Tribromodiphenyl ether		n.d.	50	
Tetrabromodiphenyl ether		n.d.	50	
Pentabromodiphenyl ether		n.d.	50	
Hexabromodiphenyl ether		n.d.	50	
Heptabromodiphenyl ether		n.d.	50	
Octabromodiphenyl ether		n.d.	50	
Nonabromodiphenyl ether		n.d.	50	
Decabromodiphenyl ether		n.d.	50	
<b>Sum of PBBs</b>		-	-	
Monobromobiphenyl		n.d.	50	
Dibromobiphenyl		n.d.	50	
Tribromobiphenyl		n.d.	50	
Tetrabromobiphenyl		n.d.	50	
Hexabromobiphenyl		n.d.	50	
Pentabromobiphenyl		n.d.	50	
Heptabromobiphenyl		n.d.	50	
Octabromobiphenyl		n.d.	50	
Nonabromobiphenyl		n.d.	50	
Decabromobiphenyl		n.d.	50	

## Test Report

No. 4518519-01

Date: 26/APR/2018

Page 4 of 6

mtm plastics GmbH  
 Bahnhofstraße 106  
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Sample No.		180337882		
Test Item(s):	Method (refer to)		RL	RoHS Limit
<b>Phthalates</b>	(7)			
Bis(2-ethylhexyl) phthalate (DEHP) (117-81-7)		n.d.	100	1000#
Butyl benzyl phthalate (BBP) (85-68-7)		n.d.	100	1000#
Dibutyl phthalate (DBP) (84-74-2)		n.d.	100	1000#
Diisobutyl phthalate (DIBP) (84-69-5)		n.d.	100	1000#

Note : mg/kg = ppm                      n.d.= not Detected                      RL = Report Limit                      n.a.= not analyzed

\*\* = elevated reporting limit due to matrix interferences

# = limit valid from 22/JUL/2019

# Test Report

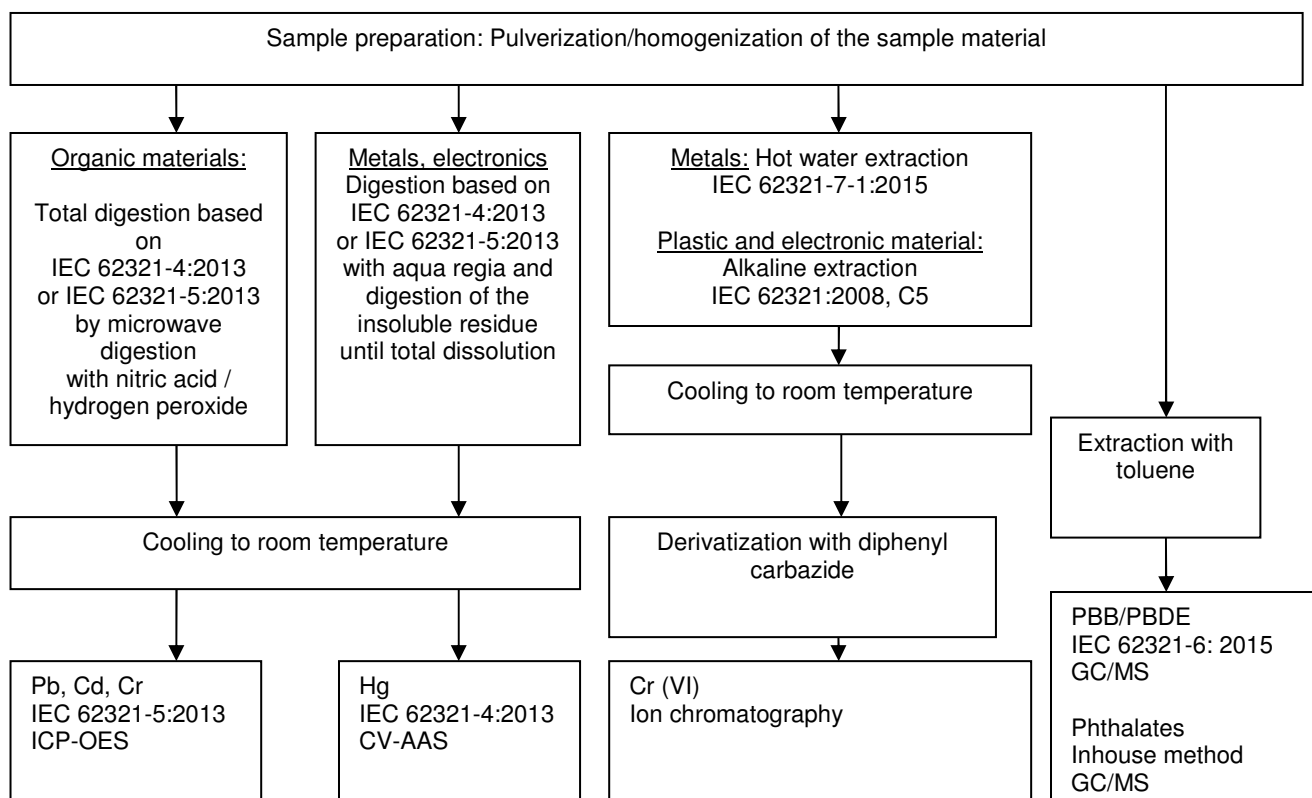
No. 4518519-01

Date: 26/APR/2018

Page 5 of 6

mtm plastics GmbH  
 Bahnhofstraße 106  
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## Flow Chart for the working flow of the performed analysis



## Test Report

No. 4518519-01

Date: 26/APR/2018

Page 6 of 6

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## Sample Photo(s)



\*\*\*End of Report\*\*\*

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