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**LABORATORY OF MATERIAL
ENGINEERING AND ENVIRONMENT**



AB 910

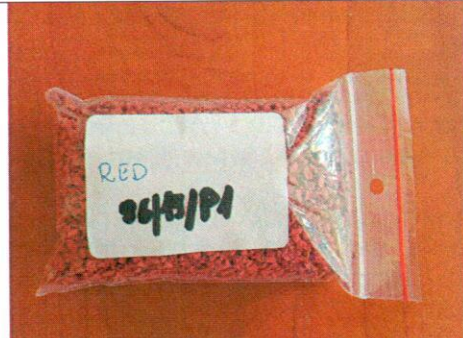
TEST REPORT No. 96/DLS/2019

**Testing the material samples of RED granulates delivered by
UNIRUBBER Sp. z o.o. for a content of Polycyclic Aromatic
Hydrocarbons (PAHs)**

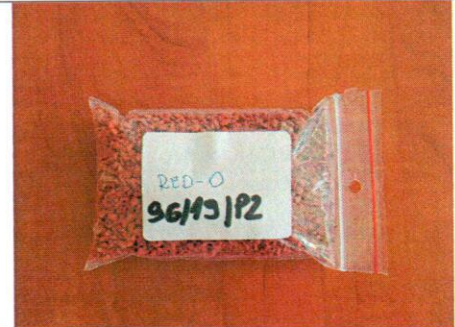
Orderer: UNIRUBBER Sp. z o.o.
Zielonka 17
59-940 Węgliniec

Project UP/DLS-24758/OR1
No.:

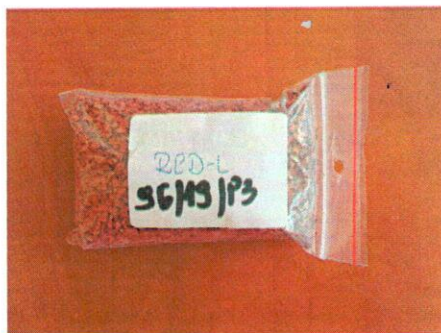
Name of tested object:	Material sample of RED granulate
Orderer markings:	RED
Number of sample, according to the R-DLS/7:	96/19/P1



Name of tested object:	Material sample of RED - 0 granulate
Orderer markings:	RED - 0
Number of sample, according to the R-DLS/7:	96/19/P2



Name of tested object:	Material sample of RED - L granulate
Orderer markings:	RED - L
Number of sample, according to the R-DLS/7:	96/19/P3



Date of delivery of the object for testing: 31.01.2019
 Date of beginning / completion of tests: 01.02.2019 / 18.02.2019
 Place of testing: Laboratory of Material Engineering and Environment

Sample number	Confirmation of conformity/non-conformity with the requirements	
European Parliament and Council (EC) Regulation No. 1907/2006 for registration, assessment and authorization of chemicals (REACH) as regards phthalates content (OJ L 396, 30.12.2006, p. 1-794 with further amendments)		
96/19/P1	Content of each of the following PAHs: benzo[a] pyrene, benzo[e]pyrene, benzo[a]anthracene, chrysen, benzo[b]fluoranthene, benzo[j]fluoranthene, benzo[k]fluoranthene, dibenzo[a,h]anthracene ≤ 1 mg/kg in relation to the weight of material with admixture of PAH	+
96/19/P2		+
96/19/P3		+
Testing and assessment of polycyclic aromatic hydrocarbons (PAHs) in the course of awarding the GS mark - Specification pursuant to article 21(1) no. 3 of the Product Safety Act (ProdSG) – AfPS GS 2014:01 PAK, Federal Institute for Occupational Safety and Health		
96/19/P1	Category 2 Content of each of the following PAHs: benzo[a]anthracene, benzo[b]fluoranthene, benzo[k]fluoranthene, benzo[j]fluoranthene, benzo[a]pyrene, benzo[e]pyrene, indeno[1,2,3-c,d]pyrene, benzo[g,h,i]perylene, dibenzo[a,h]anthracene, chrysen, is < 0,5 mg/kg in relation to the weight of material with admixture of PAH.	+
96/19/P2	Total content of the following PAHs: acenaphthylene, acenaphthene, fluorene, phenanthrene, anthracene, fluoranthene, pyrene < 10 mg/kg in relation to the weight of material with admixture of PAH	+
96/19/P3	Content of naphthalene < 2 mg/kg in relation to the weight of material with admixture of PAH Total content of 18 WWA is < 10 mg/kg in relation to the weight of material with admixture of PAH	+

signs: "+" – conform to the requirements, "-" – not conform to the requirements

Note: Confirmation of conformity with the requirements is based on a confidence level of 95% for the expanded uncertainty of measurement results on which the decision of conformity is based.

Leader of testing team:

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 Monika Gawlik-Jędrzyiak, Ph.D. Eng.
 /name/

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Collaborating team:

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 Renata Budzyńska-Bartoń, Ph.D.
 /name/

Authorized by:

.....
 Beata Gryniewicz-Bylina, Ph.D. Eng.
 Profesor at KOMAG
 /name/

.....
 /signature/

Approved by

.....
 dr hab. Beata Gryniewicz-Bylina
 /signature and stamp/

Gliwice, 18.02.2019

TEST REPORT CONTAINS THE RESULTS APPLICABLE ONLY TO THE TESTED OBJECT DELIVERED BY THE ORDERER.
 KOMAG TAKES OBLIGATION TO KEEP IN SECRET THE TEST RESULTS AND WITHOUT ORDERER'S CONSENT
 KOMAG WILL NOT DISSEMINATE THE RESULTS THIS WILL NOT BE IN FORCE IF LAW REGULATIONS ARE DIFFERENT
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 CAN NOT BE MADE WITHOUT AUTHORS PERMISSION

Description of the samples

Material samples of RED granulates in red.
The samples were taken and delivered for testing by the Orderer.

Scope and methods of testing

Item	Tested parameters	Testing method	Testing procedure and Standard
1.	Polycyclic aromatic hydrocarbons (PAHs) content	Gas chromatography method with tandem mass spectrometry (GC-MS/MS)	PB-DLS/38, 4 rd edition; 2017

Test Results

Item	Sample number	Content PAHs [mg/kg]	
		Content	Limit
1.	96/19/P1	benzo[a]pyrene	U
		< 0,1	-
		benzo[e]pyrene	U
		< 0,1	-
		benzo[a]anthracene	U
		< 0,1	-
		chrysene	U
		< 0,1	-
		benzo[b]fluoranthene	U
		< 0,1	-
		benzo[j]fluoranthene	U
		< 0,1	-
		benzo[k]fluoranthene	U
		< 0,1	-
		dibenzo[a,h]anthracene	U
		< 0,1	-
		benzo[g,h,i]perylene	U
		< 0,1	-
		indeno(1,2,3-cd)pyrene	U
		< 0,1	-
		acenaphthene	U
		< 0,1	-
		fluorene	U
		< 0,1	-
		acenaphthylene	U
		< 0,1	-
phenanthrene	U		
< 0,1	-		
pyrene	U		
< 0,1	-		
anthracene	U		
< 0,1	-		
fluoranthene	U		
< 0,1	-		
naphthalene	U		
< 0,1	-		

Item	Sample number	Content PAHs [mg/kg]	
		Substance	Result
2.	96/19/P2	benzo[a]pyrene	U
		< 0,1	-
		benzo[e]pyrene	U
		< 0,1	-
		benzo[a]anthracene	U
		< 0,1	-
		chrysene	U
		< 0,1	-
		benzo[b]fluoranthene	U
		< 0,1	-
		benzo[j]fluoranthene	U
		< 0,1	-
		benzo[k]fluoranthene	U
		< 0,1	-
		dibenzo[a,h]anthracene	U
		< 0,1	-
		benzo[g,h,i]perylene	U
		< 0,1	-
		indeno(1,2,3-cd)pyrene	U
		< 0,1	-
		acenaphthene	U
		< 0,1	-
		fluorene	U
		< 0,1	-
		acenaphthylene	U
		< 0,1	-
		phenanthrene	U
		< 0,1	-
pyrene	U		
< 0,1	-		
anthracene	U		
< 0,1	-		
fluoranthene	U		
< 0,1	-		
naphthalene	U		
< 0,1	-		

Item	Sample number	Content PAHs [mg/kg]	
3.	96/19/P3	benzo[a]pyrene	U
		< 0,1	-
		benzo[e]pyrene	U
		< 0,1	-
		benzo[a]anthracene	U
		< 0,1	-
		chrysene	U
		< 0,1	-
		benzo[b]fluoranthene	U
		< 0,1	-
		benzo[j]fluoranthene	U
		< 0,1	-
		benzo[k]fluoranthene	U
		< 0,1	-
		dibenzo[a,h]anthracene	U
		< 0,1	-
		benzo[g,h,i]perylene	U
		< 0,1	-
		indeno(1,2,3-cd)pyrene	U
		< 0,1	-
		acenaphthene	U
		< 0,1	-
		fluorene	U
		< 0,1	-
		acenaphthylene	U
		< 0,1	-
		phenanthrene	U
		< 0,1	-
pyrene	U		
< 0,1	-		
anthracene	U		
< 0,1	-		
fluoranthene	U		
< 0,1	-		
naphthalene	U		
< 0,1	-		

Note: measurements uncertainty U is an expanded uncertainty at confidence level 95% and coverage factor $k = 2$, according to the IO-DLS/03 general instruction.

The results and their uncertainty refer only to the tested sample and not to the product batch/substance/material the

Rules for taking decisions on compliance/ not compliance with the requirements

According to ISO/IEC Guide 98-4:2012 "Uncertainty of measurement. Part 4: Role of measurement uncertainty in conformity assessment" and ILAC-G8:03/2009 guidelines.: "Guidelines on the Reporting of Compliance with Specification":

1. **Compliance with the requirements is stated when the measurement result/test result plus/minus expanded uncertainty at confidence level 95% and coverage factor $k = 2$, is within the limits defined in regulations / standards by the accepted value/values.**
2. **Non-compliance with the requirements is stated when the measurement result/test result plus/minus expanded uncertainty at confidence level 95% and coverage factor $k = 2$, is outside the limits defined in regulations / standards by the accepted value/values**
3. **Compliance or non-compliance with the requirements cannot be stated when the measurement result/test result plus/minus expanded uncertainty at confidence level 95% and coverage factor $k = 2$, overlaps upper/lower limit defined in regulations / standards by the accepted value/values.**

Number of copies – 2

UNIRUBBER Sp. z o. o. x 1

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