

# Occurrence of polycyclic aromatic hydrocarbons (PAHs) in chocolate and chocolate confectionery products

## Report to the Food Standards Agency

January 2015



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# **Occurrence of polycyclic aromatic hydrocarbons (PAHs) in chocolate and chocolate confectionery products**

Report Number: FD 15/01

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Date: January 2015

Sponsor: UK Food Standards Agency

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Sponsor's Project Number: FS102071 (A56FW001)

FERA Contract Number: A2FY 5010

FERA File Reference: FLN 9289

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Opinions and interpretations are outside the scope of UKAS accreditation. The following reported analyses fall within the scope of UKAS accreditation: PAHs



## Glossary of Main Terms

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<b>Term or Acronym</b>	<b>General Meaning Of Term</b>
BaP	Benzo[a]pyrene
EFSA	European Food Safety Authority
FAPAS	Food Analysis Performance Assessment Scheme
JRC-IRMM	Joint Research Centre - Institute for Reference Materials and Measurements
PAHs	Polycyclic aromatic hydrocarbons
PAH 4	Sum of 4 PAHs (benzo[a]pyrene, benz[a]anthracene, benzo[b]fluoranthene, chrysene)
Whole weight	Values based on the sample as received 'whole'.
Fat weight	Values based on the fat content of the sample.
Lower bound	assumes values at less than the limit of detection are zero (e.g.<0.01=0)
Upper bound	assumes values at less than the limit of detection are equal to the limit of detection (e.g. <0.07=0.07)
µg/kg	Microgram per kilogram ( $\times 10^6$ / part per billion)
HRGC-LRMS	High resolution gas chromatography – unit resolution mass spectrometry
UKAS	United Kingdom Accreditation Service

## Executive Summary

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PAHs constitute a large class of organic compounds with two or more fused aromatic rings and occur in complex mixtures consisting of hundreds of compounds. As contaminants of food they are of concern because some of these compounds have been identified as genotoxic carcinogens, mutagens and teratogens. Elevated levels of PAHs can arise in cocoa beans as a result of the methods used to dry them in producing countries with poor technological capabilities. Commission Regulation (EU) No 835/2011 imposes initial, higher maximum levels, for benzo(a)pyrene and the PAH4 , for cocoa beans and derived products to allow producing countries to make technological improvements. After a transition period of two years a lower maximum level should apply and the levels of PAH in cocoa beans and derived products should be regularly monitored with a view to assessing the possibility for further decreasing the maximum levels in future.

100 Retail chocolate and chocolate confectionary products were purchased by a sample collection agency and sent to FERA. The samples included 50 individual products purchased in duplicate with a cocoa content greater than 50%.

The samples were homogenised and analysed using an established, validated analytical procedure for PAHs that is UKAS accredited to the ISO 17025 standard and has been reported before in detail to the FSA. The methodology is based on internal standardisation (<sup>13</sup>Carbon) with measurement by GC-MS (Rose et al, 2007). Each sample was also subsampled and sent to a subcontractor to be analysed for fat content using a UKAS accredited method based on BS:4401:Part 4 1970 (Werner-Schmidt Method).

Of the 28 PAH compounds monitored, those with lower molecular weight were found to occur with elevated levels in the majority of the samples. Of the more toxicologically significant and regulated compounds, benzo[a]pyrene concentrations ranged from <0.19 µg/kg to 6.62 µg/kg (fat) and PAH4 concentrations ranged from 0.95 µg/kg to 29.80 µg/kg (fat). 92 of the 100 samples showed relatively low levels with PAH4 concentrations occurring below 10µg/kg (fat). From the 8 remaining samples none exceeded EU maximum limits for PAH4 of 30 µg/kg (fat). Once measurement uncertainty was taken into account, only one sample exceeded the EU maximum limit for benzo(a)pyrene of 5µg/kg (fat), with a concentration of 6.62 µg/kg ( $\pm 1.18$  µg/kg).

## 1. Study Background

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PAHs are a complex group of chemicals with two or more fused aromatic ring systems. The molecules do not contain heteroatoms and are not substituted. PAHs occur naturally in coal, crude oil and tar deposits, and can be inadvertently produced as by-products of incomplete fossil fuel or biomass combustion. As environmental pollutants, they are of concern because some compounds have been identified as genotoxic carcinogens, mutagens and teratogens. They occur widely in the environment and their environmental transport is governed by their volatility and chemical reactivity. They are also lipophilic with poor aqueous solubility and unless metabolised, tend to occur in the lipid rich tissues of plants and animals.

Elevated levels of Polycyclic aromatic hydrocarbons (PAHs) may be present in cocoa butter mainly due to inappropriate drying practices of cocoa beans and the fact that cocoa butter cannot be refined in the same way as other vegetable oils and fats.

Cocoa butter is a main constituent of cocoa raw products (e.g cocoa beans, cocoa mass, cocoa nibs or cocoa liquor) and is present in chocolate and other cocoa products often consumed by children. It thereby contributes to human exposure, in particular exposure by children. The PAH content of cocoa beans and derived products is regulated in the EU based on the risk assessment conducted by EFSA, and uses the system of maximum permitted levels, on a fat weight basis, for the sum of four substances (PAH4; the sum of benzo(a)pyrene, benz(a)anthracene, benzo(b)fluoranthene and chrysene) whilst maintaining a separate maximum level for benzo(a)pyrene (BaP).

The processing of food – smoking, cooking over a direct heat source (barbecuing), drying etc, are generally recognised as a major source of PAH contamination in food (Lijinsky and Ross 1967, Saint-Aubert et al 1992, Lintas et al 1979, White et al 2008). In the context of the current investigation, it is known that in some cocoa bean producing countries, cocoa beans can be dried over smoky fires or at the side of the road. The condensation and absorption mechanisms that occur on the surface of the food are likely to lead to the PAHs being incorporated into the food.

The FSA has carried out a number of studies on PAHs over the last few years, and these have usually been targeted towards certain foods such as cereals and dried and smoked products which may be expected to show the presence of PAHs due to processing. Data from the current study will allow background concentrations to be re-assessed and should help with the risk assessment

and discussion of any potential reduction of maximum levels on the PAH content of cocoa beans and derived products.

## 2. Study Experimental

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### 2.1 Sample Collection and Preparation

A list of samples including a description and FERA sample number is given in Table 1.

100 Retail chocolate and chocolate confectionary products were purchased by a sample collection agency and sent to FERA. The samples included 50 individual products purchased in duplicate, all with a cocoa content greater than 50%.

On receipt at the laboratory, each sample was given a unique laboratory reference number and the sample details were logged into a database. All samples were ground to a small particle size (<1 mm), and were then thoroughly homogenised. Approximately 5 g aliquots of sample were taken for analysis.

### 2.2 Contaminants measured – Specific Analytes

The following analytes were determined: Regulated contaminants are highlighted in **bold**.

PAHs - acenaphthene, acenaphthylene, fluorene, phenanthrene, anthracene, fluoranthene, benzo[c]fluorene, pyrene, benzo[e]pyrene, benzo[b]naphtho[2,1-d]thiophene, anthanthrene, coronene, benzo[ghi]fluoranthene, **benz[a]anthracene**, **chrysene**, **benzo[b]fluoranthene**, benzo[j]fluoranthene, benzo[k]fluoranthene, **benzo[a]pyrene**, cyclopenta[c,d]pyrene, indeno[123cd]pyrene, dibenzo[ah]anthracene, benzo[ghi]perylene, dibenzo[al]pyrene, dibenzo[ae]pyrene, dibenzo[ai]pyrene, dibenzo[ah]pyrene and the substituted PAH, 5-methylchrysene

### 2.3 Analytical Methodology

The analytical methodology for the PAHs has been published (Rose et al, 2007) and reported before in detail to the FSA (Fernandes et al 2011). The methodology is based on internal standardisation (<sup>13</sup>Carbon) with GC-MS measurement. An aliquot of the homogenised sample was fortified with <sup>13</sup>C-labelled analogues of target compounds and saponified with methanolic potassium hydroxide. The extracted PAH solutions were purified in two stages with a DMF/cyclohexane partition followed by adsorption chromatography on activated silica. A sensitivity standard was added to the purified extracts and these were measured using high resolution gas chromatography with unit resolution mass spectrometry.

Fat content analysis was conducted by a subcontractor using a UKAS accredited method based on BS:4401:Part 4 1970 (Werner-Schmidt Method).

## 2.4 Quality Control

Fera is the UK National Reference Laboratory for PAHs in food. The analytical procedure for PAHs is UKAS accredited to the ISO 17025 standard and includes the assessment of method blanks and reference materials, (RM0651, PAHs in palm oil – FAPAS 2012) for compliance with the accreditation criteria. The methodology also meets the criteria required for evaluating data against the maximum permitted limits for benzo[a]pyrene as specified in EU Commission Regulations. Additionally, FERA has also participated in recent international inter-comparison exercises (JRC-IRMM 2012, 2013 FAPAS 2012, 2013) where results reported by the laboratory were in good agreement with consensus data.

### 3. Results & Discussion

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The concentrations of the 28 PAH compounds measured in this study are given in Table 2. The concentrations are reported in µg/kg of whole product and µg/kg of fat. Data was rounded to two decimal places for all analytes. Measurement uncertainty has been included for each sample.

The reporting limit quoted (as “<”) for all analytes was the limit of determination that prevailed in that instance. The limit is calculated dynamically for each compound in each sample, and takes into account instrument signal-to-noise levels, sample weight, analytical recovery and concentrations detected in method blanks.

Of the 28 PAH compounds monitored, those with lower molecular weight were found to occur with elevated levels in the majority of the samples. BaP concentrations on a fat weight basis, for the regulated compounds, ranged from <0.19 µg/kg to 6.62 µg/kg and PAH4 concentrations on a fat weight basis ranged from 0.95 µg/kg to 29.80 µg/kg. Only one sample, S13-064102, exceeded EU maximum limits for benzo(a)pyrene of 5µg/kg (fat) once measurement uncertainty was taken into account, with a concentration of 6.62 µg/kg ( $\pm 1.18 \mu\text{g}/\text{kg}$ ).

92 of the samples showed relatively low levels for the regulated compounds with PAH4 concentrations occurring below 10 µg/kg (fat), none of the 8 remaining samples exceeded EU maximum limits for PAH4 of 30 µg/kg (fat).

## 4. References

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FAPAS Proficiency Test 0651 Report, Environmental Contaminants, PAHs in palm oil, June 2012. (Consensus value data from participating laboratories used for establishing acceptance criteria for use as an in-house reference material.)

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Saint-Aubert, B Cooper, J Astre, C Spiliotis J and Joyeux, H 1992, Evaluation of the induction of Polycyclic Aromatic Hydrocarbons (PAH) by cooking on Two Geometrically Different Types of Barbecue. *J. Food Compos. Anal, Vol 5*, pp257-263.

**Table 1: Overview of samples**

OEC Sample No.	LIMS No.	Product description	% Cocoa	% Fat	Batch code	Expiry date	Country of origin
22290	S13-064035	Smooth Dark Chocolate	50	34.1	133295	30/11/2014	Belgium
22291	S13-064036	Organic Mint 54% Drinking Chocolate	54	38.9	m648	07/12/2014	United Kingdom
22292	S13-064037	Organic Mint 54% Drinking Chocolate	54	39.1	m648	07/12/2014	United Kingdom
22293	S13-064038	74% Dark Chocolate with Mayan Spice	74	44.4	Not declared	15/11/2014	United Kingdom
22294	S13-064039	74% Dark Chocolate with Mayan Spice	74	44.7	Not declared	15/11/2014	United Kingdom
22295	S13-064040	74% Dark Forest Dark Chocolate with Forest Fruits	74	42.0	Not declared	16/11/2014	United Kingdom
22296	S13-064041	74% Dark Forest Dark Chocolate with Forest Fruits	74	39.4	Not declared	16/11/2014	United Kingdom
22297	S13-064042	74% Raspberry Dark Chocolate with Raspberry	74	40.4	Not declared	17/10/2014	United Kingdom
22298	S13-064043	74% Raspberry Dark Chocolate with Raspberry	74	39.2	Not declared	17/10/2014	United Kingdom
22299	S13-064044	Panama Tierra Oscura	72	42.7	130064	01/03/2015	United Kingdom
22300	S13-064045	Panama Tierra Oscura	72	43.8	130064	01/03/2015	United Kingdom
22301	S13-064046	Corazon Del Ecuador Cocoa Nibs/Coffee	72	39.2	130088	01/12/2014	United Kingdom
22302	S13-064047	Corazon Del Ecuador Cocoa Nibs/Coffee	72	38.6	130088	01/12/2014	United Kingdom
22303	S13-064048	Panama Tierra Oscura Roasted Cocoa Beans	100	10.4	Not declared	Not declared	United Kingdom
22304	S13-064049	Panama Tierra Oscura Roasted Cocoa Beans	100	8.4	Not declared	Not declared	United Kingdom
22305	S13-064050	100% Cocoa	100	50.6	488	18/09/2016	Grenada

OEC Sample No.	LIMS No.	Product description	% Cocoa	% Fat	Batch code	Expiry date	Country of origin
22306	S13-064051	100% Cocoa	100	51.5	488	18/09/2016	Grenada
22307	S13-064052	Dark Chocolate With Violet	65	34.4	59001	30/11/2014	United Kingdom
22308	S13-064053	Dark Chocolate With Violet	65	35.5	59001	30/11/2014	United Kingdom
22309	S13-064054	Orange & Geranium Dark Chocolate	65	33.9	34001	31/12/2014	United Kingdom
22310	S13-064055	Orange & Geranium Dark Chocolate	65	34.1	34001	31/12/2014	United Kingdom
22311	S13-064056	Chilli Pepper Dark Chocolate Artisan Bar	65	32.3	59001	30/11/2014	United Kingdom
22312	S13-064057	Chilli Pepper Dark Chocolate Artisan Bar	65	33.4	59001	30/11/2014	United Kingdom
22313	S13-064058	Dark Chocolate Floral Bar Jasmine	65	33.4	89001	31/10/2014	United Kingdom
22314	S13-064059	Dark Chocolate Floral Bar Jasmine	65	34.4	89001	31/10/2014	United Kingdom
22315	S13-064060	Dark Chocolate With Nibs	70	32.9	25413101	23/04/2014	Belgium
22316	S13-064061	Dark Chocolate With Nibs	70	32.3	25413101	23/04/2014	Belgium
22317	S13-064062	Darker Chocolate With Brazil Nuts & Apricots	70	18.7	Not declared	01/08/2014	United Kingdom
22318	S13-064063	Darker Chocolate With Brazil Nuts & Apricots	70	20.7	Not declared	01/08/2014	United Kingdom
22319	S13-064064	Chocolate Mint Thins	50	18.5	L5-3351.10:41	01/12/2014	United Kingdom
22320	S13-064065	Chocolate Mint Thins	50	18.3	L5-3351.10:41	01/12/2014	United Kingdom
22321	S13-064066	85% Cocoa Ivory Coast & Ecuador Plain Chocolate	85	42.5	L3308 2 A	01/05/2015	France
22322	S13-064067	85% Cocoa Ivory Coast & Ecuador Plain Chocolate	85	42.6	L3308 2 A	01/05/2015	France
22323	S13-064068	Finest Equadorian 74% Dark Chocolate	74	39.6	L3294 1406	01/10/2014	Italy
22324	S13-064069	Finest Equadorian 74% Dark Chocolate	74	41.6	L3294 1406	01/10/2014	Italy
22325	S13-064070	Cocoa Peruvian Gold	70	36.8	L20029	24/04/2015	United Kingdom
22326	S13-064071	Cocoa Peruvian Gold	70	34.2	L20029	24/04/2015	United Kingdom
22327	S13-064072	Cocoa Ginger & Lime	70	30.3	L0010	16/11/2014	United Kingdom
22328	S13-064073	Cocoa Ginger & Lime	70	33.0	L0010	16/11/2014	United Kingdom

OEC Sample No.	LIMS No.	Product description	% Cocoa	% Fat	Batch code	Expiry date	Country of origin
22329	S13-064074	70% Dark Chocolate	70	40.9	NDH3.A01	30/09/2015	Italy
22330	S13-064075	70% Dark Chocolate	70	39.1	NDH3.A01	30/09/2015	Italy
22331	S13-064076	Smooth Dark Chocolate	50	38.0	133295	30/11/2014	Belgium
22332	S13-064077	Truly Irresistible Ghanaian Dark Chocolate	85	41.8	L213178	01/04/2014	Germany
22333	S13-064078	Truly Irresistible Ghanaian Dark Chocolate	85	44.8	L213178	01/04/2014	Germany
22334	S13-064079	Signature 72% Dark Chocolate	72	41.4	L3261 0854	01/09/2015	Not declared
22335	S13-064080	Signature 72% Dark Chocolate	72	40.9	L3261 0855	02/09/2015	Not declared
22336	S13-064081	75% From Madagascar	75	42.0	LOT A	01/11/2014	France
22337	S13-064082	75% From Madagascar	75	42.6	LOT A	01/11/2014	France
22338	S13-064083	Dark Chocolate From Brazil	75	46.5	LOT A	01/10/2014	France
22339	S13-064084	Dark Chocolate From Brazil	75	46.0	LOT A	01/10/2014	France
22340	S13-064085	Trinidad Vintage 2013	64	37.1	LP7513183	01/12/2014	France
22341	S13-064086	Trinidad Vintage 2013	64	38.1	LP7513183	01/12/2014	France
22342	S13-064087	66% Cocoa	66	37.8	LP7513247	01/01/2015	France
22343	S13-064088	66% Cocoa	66	37.5	LP7513247 & LP7513268	01/01/2015	France
22344	S13-064089	64% Cocoa	64	35.6	LP7513248	01/01/2015	France
22345	S13-064090	64% Cocoa	64	37.3	LP7513248	01/01/2015	France
22346	S13-064091	Ginger Dark Chocolate	60	26.7	OWR0333732 23	14/03/2015	EU
22347	S13-064092	Ginger Dark Chocolate	60	27.1	OWR0333732 23	14/03/2015	EU
22348	S13-064093	Maya Gold Dark Chocolate	55	35.1	OWR0332833 26	10/01/2015	EU
22349	S13-064094	Maya Gold Dark Chocolate	55	35.8	OWR0332833 26	10/01/2015	EU
22350	S13-064095	Excellence Noir 90% Cocoa	90	51.4	L5573 34 14:30	01/01/2015	France
22351	S13-064096	Excellence Noir 90% Cocoa	90	50.9	L5573 34 14:30	01/01/2015	France
22354	S13-064097	Excellence 85% Cocoa	85	38.8	L5572 34	01/01/2014	France
22355	S13-064098	Excellence 85% Cocoa	85	40.1	L5572 34	01/01/2014	France
22356	S13-064099	Excellence 70% Cocoa	70	36.1	L4693 11 00:51	01/11/2014	France
22357	S13-064100	Excellence 70% Cocoa	70	36.1	L4693 11 00:51	01/11/2014	France
22358	S13-064101	Fortissima 80% Cocoa	80	42.5	Not declared	20/06/2014	France

OEC Sample No.	LIMS No.	Product description	% Cocoa	% Fat	Batch code	Expiry date	Country of origin
22359	S13-064102	Fortissima 80% Cocoa	80	37.6	Not declared	20/06/2014	France
22360	S13-064103	Vanuatu Amelonado 75% Cocoa	75	42.3	Not declared	22/01/2015	France
22361	S13-064104	Vanuatu Amelonado 75% Cocoa	75	41.8	Not declared	22/01/2015	France
22362	S13-064105	Chuao 70% Chocoa	70	39.3	0000247TVH	30/12/2014	Italy
22363	S13-064106	Chuao 70% Chocoa	70	38.6	0000247TVH	30/12/2014	Italy
22364	S13-064107	Tuscano Black 63% Chocoa	63	36.1	0000248TVC	30/12/2014	Italy
22365	S13-064108	Tuscany Tuscano Black 63% Chocoa	63	35.7	0000248TVC	30/12/2014	Italy
22366	S13-064109	Mokaya B10 Organic	66	39.2	Not declared	23/05/2015	France
22367	S13-064110	Mokaya B10 Organic	66	39.4	Not declared	23/05/2015	France
22368	S13-064111	Dark Chocolate 70% Trio of Madagascan Peppers	70	37.1	248-MEN	30/04/2015	Madagascar
22369	S13-064112	Dark Chocolate 70% Trio of Madagascan Peppers	70	38.3	248-MEN	30/04/2015	Madagascar
22370	S13-064113	Grand Noir 85% Chocoa	85	47.1	Not declared	19/02/2015	France
22371	S13-064114	Grand Noir 85% Chocoa	85	45.2	Not declared	19/02/2015	France
22372	S13-064115	Organic 70% Dark Chocolate	70	40.8	OWR0333511 16	26/02/2015	EU
22373	S13-064116	Organic 70% Dark Chocolate	70	39.8	OWR0333511 26	26/02/2015	EU
22374	S13-064117	Pure Dark Chocolate Powder	70	37.8	3315	01/11/2014	United Kingdom
22375	S13-064118	Pure Dark Chocolate Powder	70	37.0	3315	01/11/2014	United Kingdom
22376	S13-064119	Cacao Venezuelan Gold	72	36.0	L60018	22/05/2015	United Kingdom
22377	S13-064120	Cacao Venezuelan Gold	72	36.7	L60018	22/05/2015	United Kingdom
22378	S13-064121	Cacao Luscious Orange	65	38.1	L0008	05/06/2015	United Kingdom
22379	S13-064122	Cacao Luscious Orange	65	37.0	L0008	05/06/2015	United Kingdom
22380	S13-064123	Organic 71% Cocoa	71	34.3	507	15/11/2016	Grenada
22381	S13-064124	Organic 71% Cocoa	71	35.9	507	15/11/2016	Grenada
22382	S13-064125	70% Dark Chocolate with Raspberries	70	41.9	L113395	01/03/2015	Germany
22383	S13-064126	70% Dark Chocolate with Raspberries	70	40.8	L113395	01/03/2015	Germany

OEC Sample No.	LIMS No.	Product description	% Cocoa	% Fat	Batch code	Expiry date	Country of origin
22384	S13-064127	Peruvian Dark Chocolate with Sweetened Dried Cranberries	52	33.5	L3179 0420	27/06/2014	Italy
22385	S13-064128	Peruvian Dark Chocolate with Sweetened Dried Cranberries	52	34.1	L3179 0420	27/06/2014	Italy
22386	S13-064129	70% Dark Choclate Intensely Rich	70	43.4	L1234441	01/04/2015	Germany
22387	S13-064130	70% Dark Choclate Intensely Rich	70	43.6	L1234441	01/04/2015	Germany
22389	S13-064132	Ecuadorian Dark Chocolate	72	39.0	132560A3	13/09/2015	France
22390	S13-064133	Ecuadorian Dark Chocolate	72	40.2	132560A3	13/09/2015	France
22391	S13-064134	Smooth Dark Chocolate	70	40.5	L11 11:48	01/09/2014	France
22388	S13-064131	Smooth Dark Chocolate	70	41.3	L11 11:48	01/09/2014	France

## Table 2. PAH concentrations - µg/kg whole weight

OEC Sample No.	22290	22291	22292	22293	
FERA LIMS No.	S13-064035	S13-064036	S13-064037	S13-064038	
Description	Smooth Dark Chocolate	Organic Mint 54% Drinking Chocolate	Organic Mint 54% Drinking Chocolate	74% Dark Chocolate with Mayan Spice	
<b>µg/kg whole weight</b>		U%	U%	U%	U%
acenaphthylene	0.53	194	0.56	183	<0.51
acenaphthene	<0.63	201	<0.63	201	<0.63
fluorene	0.88	169	0.87	171	0.91
phenanthrene	12.40	26	11.73	27	11.22
anthracene	0.55	28	0.70	25	0.69
fluoranthene	3.31	35	3.30	35	3.44
benzo[c]fluorene	0.21	23	0.22	23	0.27
pyrene	2.74	38	3.07	36	3.34
benzo[ghi]fluoranthene	0.34	17	0.39	17	0.40
<b>benz (a) anthracene</b>	<b>0.21</b>	<b>18</b>	<b>0.25</b>	<b>18</b>	<b>0.25</b>
benzo[b]naphtho[2,1-d]thiophene	0.07	33	0.06	37	0.05
cyclopenta[c,d]pyrene	0.08	30	0.21	18	0.20
<b>chrysene</b>	<b>0.33</b>	<b>29</b>	<b>0.35</b>	<b>28</b>	<b>0.36</b>
5-methylchrysene	<0.01	201	<0.01	201	<0.01
<b>benzo[b]fluoranthene</b>	<b>0.23</b>	<b>47</b>	<b>0.20</b>	<b>53</b>	<b>0.21</b>
benzo[j]fluoranthene	0.16	21	0.13	23	0.15
benzo[k]fluoranthene	0.07	33	0.06	37	0.06
benzo[e]pyrene	0.17	21	0.15	22	0.15
<b>benzo[a]pyrene</b>	<b>0.15</b>	<b>95</b>	<b>0.14</b>	<b>101</b>	<b>0.14</b>
indeno[1,2,3-cd]pyrene	<0.15	201	<0.11	201	<0.11
dibenz[ah]anthracene	<0.05	201	<0.05	201	<0.05
benzo-[g,h,i]perylene	0.15	21	0.10	25	0.10
anthanthrene	<0.1	201	<0.1	201	<0.1
dibenzo[a,l]pyrene	<0.1	201	<0.1	201	<0.1
dibenzo[a,e]pyrene	<0.1	201	<0.1	201	<0.1
dibenzo[a,i]pyrene	<0.1	201	<0.1	201	<0.1
dibenzo[a,h]pyrene	<0.1	201	<0.1	201	<0.1
coronene	<0.1	201	<0.1	201	<0.1
<b>PAH 4 Sum Lower µg/kg</b>	<b>0.92</b>		<b>0.94</b>		<b>0.96</b>
<b>PAH 4 Sum Upper µg/kg</b>	<b>0.92</b>	<b>51</b>	<b>0.94</b>	<b>52</b>	<b>0.96</b>
				<b>48</b>	<b>1.02</b>
					<b>44</b>

OEC Sample No.	22294	22295	22296	22297				
FERA LIMS No.	S13-064039	S13-064040	S13-064041	S13-064042				
Description	74% Dark Chocolate with Mayan Spice	74% Dark Forest Dark Chocolate with Forest Fruits	74% Dark Forest Dark Chocolate with Forest Fruits	74% Raspberry Dark Chocolate with Raspberry				
µg/kg whole weight	U%	U%	U%	U%	U%			
acenaphthylene	<0.5	201	<0.51	201	<0.51	201	<0.5	201
acenaphthene	<0.63	201	<0.63	201	<0.63	201	<0.63	201
fluorene	0.89	165	<0.74	201	0.75	198	0.78	191
phenanthrene	13.20	26	10.64	28	10.71	28	10.95	27
anthracene	0.64	26	0.48	30	0.51	29	0.54	28
fluoranthene	4.80	29	3.47	34	3.54	34	3.43	35
benzo[c]fluorene	0.29	22	0.31	22	0.25	22	0.28	22
pyrene	5.73i	26	3.55i	33	3.58i	32	3.20	35
benzo[ghi]fluoranthene	0.62	16	0.41	17	0.37	17	0.39	17
<b>benz (a) anthracene</b>	<b>0.25</b>	<b>18</b>	<b>0.20</b>	<b>19</b>	<b>0.22</b>	<b>18</b>	<b>0.21</b>	<b>18</b>
benzo[b]naphtho[2,1-d]thiophene	0.07	33	0.04	52	0.06	37	0.04	52
cyclopenta[c,d]pyrene	0.19	19	0.14	21	0.13	22	0.08	30
<b>chrysene</b>	<b>0.37</b>	<b>17</b>	<b>0.30</b>	<b>17</b>	<b>0.33</b>	<b>17</b>	<b>0.31</b>	<b>17</b>
5-methylchrysene	<0.01	201	<0.01	201	<0.01	201	<0.01	201
<b>benzo[b]fluoranthene</b>	<b>0.24</b>	<b>45</b>	<b>0.21</b>	<b>51</b>	<b>0.23</b>	<b>47</b>	<b>0.23</b>	<b>47</b>
benzo[j]fluoranthene	0.19	20	0.16	21	0.16	21	0.17	21
benzo[k]fluoranthene	0.07	33	0.06	37	0.06	37	0.06	37
benzo[e]pyrene	0.17	21	0.14	22	0.17	21	0.15	22
<b>benzo[a]pyrene</b>	<b>0.14</b>	<b>101</b>	<b>0.13</b>	<b>109</b>	<b>0.15</b>	<b>95</b>	<b>0.14</b>	<b>101</b>
indeno[1,2,3-cd]pyrene	<0.12	201	<0.11	201	<0.11	201	<0.11	201
dibenz[ah]anthracene	<0.04	201	<0.05	201	<0.05	201	<0.05	201
benzo-[g,h,i]perylene	0.10	25	0.10	25	0.10	25	0.10	25
anthanthrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,l]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,e]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,i]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,h]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
coronene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
<b>PAH 4 Sum Lower µg/kg</b>	<b>1.00</b>		<b>0.84</b>		<b>0.93</b>		<b>0.89</b>	
<b>PAH 4 Sum Upper µg/kg</b>	<b>1.00</b>	<b>46</b>	<b>0.84</b>	<b>56</b>	<b>0.93</b>	<b>48</b>	<b>0.89</b>	<b>52</b>

OEC Sample No.	22298	22299	22300	22301				
FERA LIMS No.	S13-064043	S13-064044	S13-064045	S13-064046				
Description	74% Raspberry Dark Chocolate with Raspberry	Panama Tierra Oscura	Panama Tierra Oscura	Corazon Del Ecuador Cocoa Nibs/Coffee				
µg/kg whole weight	U%	U%	U%	U%	U%			
acenaphthylene	<0.51	201	<0.5	201	<0.5	201	<0.51	201
acenaphthene	<0.63	201	1.42	91	2.46	55	1.80	73
fluorene	0.87	171	3.65	46	4.16	41	2.43	64
phenanthrene	11.47	27	19.62	23	19.31	23	14.63	25
anthracene	0.55	28	0.70	25	0.94	24	0.89	24
fluoranthene	3.50	34	2.31	46	2.37	45	2.92	38
benzo[c]fluorene	0.27	22	0.16	24	0.12	27	0.13	26
pyrene	3.40i	33	2.12	47	2.07	47	3.09i	35
benzo[ghi]fluoranthene	0.37	17	0.17	20	0.16	20	0.23	18
<b>benz (a) anthracene</b>	<b>0.22</b>	<b>18</b>	<b>0.14</b>	<b>21</b>	<b>0.16</b>	<b>20</b>	<b>0.29</b>	<b>17</b>
benzo[b]naphtho[2,1-d]thiophene	0.04	52	0.06	37	<0.07	201	<0.13	201
cyclopenta[c,d]pyrene	0.10	25	0.03	69	0.04	52	0.07	33
<b>chrysene</b>	<b>0.31</b>	<b>17</b>	<b>0.23</b>	<b>18</b>	<b>0.23</b>	<b>46</b>	<b>0.44</b>	<b>28</b>
5-methylchrysene	<0.01	201	<0.01	201	<0.01	201	<0.01	201
<b>benzo[b]fluoranthene</b>	<b>0.25</b>	<b>43</b>	<b>0.16</b>	<b>65</b>	<b>0.19</b>	<b>55</b>	<b>0.28</b>	<b>40</b>
benzo[jj]fluoranthene	0.18	20	0.10	26	0.10	26	0.08	30
benzo[k]fluoranthene	0.07	33	0.04	53	0.07	33	0.10	26
benzo[e]pyrene	0.15	22	0.10	26	0.12	24	0.28	18
<b>benzo[a]pyrene</b>	<b>0.16</b>	<b>89</b>	<b>0.09</b>	<b>156</b>	<b>0.12</b>	<b>118</b>	<b>0.16</b>	<b>89</b>
indeno[1,2,3-cd]pyrene	<0.12	201	<0.07	201	<0.09	201	<0.12	201
dibenz[ah]anthracene	<0.05	201	<0.05	201	<0.05	201	<0.07	201
benzo-[g,h,i]perylene	0.11	24	0.06	37	<0.08	201	0.12	23
anthanthrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,l]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,e]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,i]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,h]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
coronene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
<b>PAH 4 Sum Lower µg/kg</b>	<b>0.94</b>		<b>0.62</b>		<b>0.70</b>		<b>1.17</b>	
<b>PAH 4 Sum Upper µg/kg</b>	<b>0.94</b>	<b>46</b>	<b>0.62</b>	<b>89</b>	<b>0.70</b>	<b>76</b>	<b>1.17</b>	<b>39</b>

OEC Sample No.	22302	22303	22304	22305				
FERA LIMS No.	S13-064047	S13-064048	S13-064049	S13-064050				
Description	Corazon Del Ecuador Cocoa Nibs/Coffee	Panama Tierra Oscura Roasted Cocoa Beans	Panama Tierra Oscura Roasted Cocoa Beans	100% Cocoa				
µg/kg whole weight	U%	U%	U%	U%				
acenaphthylene	<0.51	201	<0.5	201	<0.51	201	<0.5	201
acenaphthene	1.82	73	1.44	90	1.45	91	1.35	96
fluorene	2.35	66	1.68	91	1.52	101	1.52	100
phenanthrene	15.48	24	8.98	30	9.87	29	8.78	30
anthracene	0.88	24	0.57	27	0.57	27	0.61	27
fluoranthene	3.02	38	1.38	71	1.47	69	2.11	49
benzo[c]fluorene	0.15	25	0.07	35	0.07	35	0.10	29
pyrene	3.03i	36	1.00i	89	1.05	86	1.63	57
benzo[ghi]fluoranthene	0.24	18	0.06	37	0.07	33	0.09	27
<b>benz (a) anthracene</b>	<b>0.25</b>	<b>18</b>	<b>0.06</b>	<b>37</b>	<b>0.09</b>	<b>27</b>	<b>0.17</b>	<b>20</b>
benzo[b]naphtho[2,1-d]thiophene	<0.07	201	<0.06	201	<0.1	201	<0.07	201
cyclopenta[c,d]pyrene	0.07	33	0.01	201	<0.01	201	<0.02	201
<b>chrysene</b>	<b>0.33</b>	<b>34</b>	<b>0.09</b>	<b>112</b>	<b>0.15</b>	<b>69</b>	<b>0.19</b>	<b>55</b>
5-methylchrysene	<0.01	201	<0.01	201	<0.01	201	<0.01	201
<b>benzo[b]fluoranthene</b>	<b>0.19</b>	<b>55</b>	<b>0.14</b>	<b>73</b>	<b>0.16</b>	<b>65</b>	<b>0.14</b>	<b>73</b>
benzo[j]fluoranthene	0.10	26	0.07	33	0.08	30	0.06	37
benzo[k]fluoranthene	0.09	28	0.03	69	0.05	43	0.05	43
benzo[e]pyrene	0.15	22	0.06	37	0.09	28	0.10	26
<b>benzo[a]pyrene</b>	<b>0.14</b>	<b>101</b>	<b>0.07</b>	<b>201</b>	<b>0.10</b>	<b>141</b>	<b>0.12</b>	<b>118</b>
indeno[1,2,3-cd]pyrene	<0.1	201	<0.06	201	<0.09	201	<0.07	201
dibenz[ah]anthracene	<0.05	201	<0.04	201	<0.06	201	<0.06	201
benzo-[g,h,i]perylene	<0.1	201	<0.06	201	0.09	27	0.07	33
anthanthrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,l]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,e]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,i]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,h]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
coronene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
<b>PAH 4 Sum Lower µg/kg</b>	<b>0.91</b>		<b>0.36</b>		<b>0.50</b>		<b>0.62</b>	
<b>PAH 4 Sum Upper µg/kg</b>	<b>0.91</b>	<b>55</b>	<b>0.36</b>	<b>192</b>	<b>0.50</b>	<b>117</b>	<b>0.62</b>	<b>89</b>

OEC Sample No.	22306	22307	22308	22309				
FERA LIMS No.	S13-064051	S13-064052	S13-064053	S13-064054				
Description	100% Cocoa	Dark Chocolate With Violet	Dark Chocolate With Violet	Orange & Geranium Dark Chocolate				
<b>µg/kg whole weight</b>		U%	U%	U%	U%	U%		
acenaphthylene	<0.51	201	1.46	72	1.55	68	<0.5	201
acenaphthene	2.43	56	4.44	35	3.85	39	1.26	102
fluorene	1.88	81	1.74	88	1.69	89	1.52	100
phenanthrene	16.40	24	17.18	24	17.94	24	9.38	29
anthracene	0.74	25	0.63	26	0.65	26	0.64	26
fluoranthene	3.45	34	3.34	35	3.43	35	2.26	47
benzo[c]fluorene	0.23	23	0.26	22	0.25	22	0.11	28
pyrene	3.25i	34	3.40i	33	3.26i	34	1.63	58
benzo[ghi]fluoranthene	0.27	17	0.31	17	0.30	17	0.10	25
<b>benz (a) anthracene</b>	<b>0.24</b>	<b>18</b>	<b>0.24</b>	<b>18</b>	<b>0.22</b>	<b>18</b>	<b>0.22</b>	<b>18</b>
benzo[b]naphtho[2,1-d]thiophene	<0.1	201	<0.1	201	<0.1	201	<0.14	201
cyclopenta[c,d]pyrene	0.08	30	0.08	30	0.08	30	<0.01	201
<b>chrysene</b>	<b>0.31</b>	<b>36</b>	<b>0.31</b>	<b>36</b>	<b>0.30</b>	<b>37</b>	<b>0.32</b>	<b>35</b>
5-methylchrysene	<0.01	201	<0.01	201	<0.01	201	<0.01	201
<b>benzo[b]fluoranthene</b>	<b>0.25</b>	<b>43</b>	<b>0.27</b>	<b>41</b>	<b>0.28</b>	<b>40</b>	<b>0.20</b>	<b>53</b>
benzo[jj]fluoranthene	0.12	24	0.14	22	0.14	22	0.08	30
benzo[k]fluoranthene	0.09	28	0.08	30	0.09	28	0.07	33
benzo[e]pyrene	0.17	21	0.19	20	0.18	20	0.22	19
<b>benzo[a]pyrene</b>	<b>0.17</b>	<b>84</b>	<b>0.18</b>	<b>80</b>	<b>0.18</b>	<b>80</b>	<b>0.14</b>	<b>101</b>
indeno[1,2,3-cd]pyrene	<0.14	201	<0.14	201	<0.14	201	<0.09	201
dibenz[ah]anthracene	<0.06	201	<0.07	201	<0.06	201	<0.07	201
benzo-[g,h,i]perylene	0.13	22	0.15	21	0.14	21	0.11	24
anthanthrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,l]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,e]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,i]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,h]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
coronene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
<b>PAH 4 Sum Lower µg/kg</b>	<b>0.97</b>		<b>1.00</b>		<b>0.98</b>		<b>0.88</b>	
<b>PAH 4 Sum Upper µg/kg</b>	<b>0.97</b>	<b>48</b>	<b>1.00</b>	<b>45</b>	<b>0.98</b>	<b>46</b>	<b>0.88</b>	<b>56</b>

OEC Sample No.	22310	22311	22312	22313				
FERA LIMS No.	S13-064055	S13-064056	S13-064057	S13-064058				
Description	Orange & Geranium Dark Chocolate	Chilli Pepper Dark Chocolate Artisan Bar	Chilli Pepper Dark Chocolate Artisan Bar	Dark Chocolate Floral Bar Jasmine				
µg/kg whole weight	U%	U%	U%	U%				
acenaphthylene	0.86	120	1.52	69	0.98	106	1.60	67
acenaphthene	2.11	63	2.03	66	2.28	60	2.55	54
fluorene	1.64	93	2.20	70	1.89	81	2.10	74
phenanthrene	17.54	24	20.70	23	17.91	24	19.60	23
anthracene	0.74	25	0.82	24	0.74	25	0.95	24
fluoranthene	3.65	33	4.04i	31	3.57	34	4.32	30
benzo[c]fluorene	0.30	22	0.31	22	0.25	22	0.36	22
pyrene	3.87i	31	3.96i	31	3.45i	33	4.11i	30
benzo[ghi]fluoranthene	0.33	17	0.36	17	0.33	17	0.44	16
<b>benz (a) anthracene</b>	<b>0.19</b>	<b>19</b>	<b>0.19</b>	<b>19</b>	<b>0.20</b>	<b>19</b>	<b>0.36</b>	<b>17</b>
benzo[b]naphtho[2,1-d]thiophene	<0.07	201	<0.08	201	<0.08	201	<0.11	201
cyclopenta[c,d]pyrene	0.07	33	0.06	37	0.07	33	0.11	24
<b>chrysene</b>	<b>0.25</b>	<b>43</b>	<b>0.26</b>	<b>42</b>	<b>0.26</b>	<b>42</b>	<b>0.45</b>	<b>27</b>
5-methylchrysene	<0.01	201	<0.01	201	<0.01	201	<0.01	201
<b>benzo[b]fluoranthene</b>	<b>0.26</b>	<b>42</b>	<b>0.27</b>	<b>41</b>	<b>0.29</b>	<b>38</b>	<b>0.38</b>	<b>31</b>
benzo[jj]fluoranthene	0.14	22	0.15	22	0.15	22	0.22	19
benzo[k]fluoranthene	0.09	28	0.10	26	0.09	28	0.14	22
benzo[e]pyrene	0.17	21	0.20	20	0.20	20	0.24	19
<b>benzo[a]pyrene</b>	<b>0.17</b>	<b>84</b>	<b>0.16</b>	<b>89</b>	<b>0.17</b>	<b>84</b>	<b>0.25</b>	<b>58</b>
indeno[1,2,3-cd]pyrene	<0.14	201	<0.14	201	<0.14	201	<0.18	201
dibenz[ah]anthracene	<0.05	201	<0.05	201	<0.06	201	<0.06	201
benzo-[g,h,i]perylene	0.13	22	0.14	21	0.14	21	0.18	19
anthanthrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,l]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,e]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,i]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,h]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
coronene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
<b>PAH 4 Sum Lower µg/kg</b>	<b>0.87</b>		<b>0.88</b>		<b>0.92</b>		<b>1.44</b>	
<b>PAH 4 Sum Upper µg/kg</b>	<b>0.87</b>	<b>54</b>	<b>0.88</b>	<b>54</b>	<b>0.92</b>	<b>50</b>	<b>1.44</b>	<b>28</b>

OEC Sample No.	22314	22315	22316	22317	
FERA LIMS No.	S13-064059	S13-064060	S13-064061	S13-064062	
Description	Dark Chocolate Floral Bar Jasmine	Dark Chocolate With Nibs	Dark Chocolate With Nibs	Darker Chocolate With Brazil Nuts & Apricots	
<b>µg/kg whole weight</b>		U%	U%	U%	
acenaphthylene	1.28	82	<0.51	201	<0.51
acenaphthene	1.81	74	1.63	80	1.75
fluorene	1.60	96	2.26	69	2.19
phenanthrene	20.04	23	15.81	24	16.27
anthracene	0.91	24	1.05	23	1.07
fluoranthene	4.43i	30	3.96	32	4.14
benzo[c]fluorene	0.30	22	0.26	22	0.23
pyrene	4.20i	30	3.14i	35	3.17i
benzo[ghi]fluoranthene	0.43	16	0.31	17	0.35
<b>benz (a) anthracene</b>	<b>0.36</b>	<b>17</b>	<b>0.27</b>	<b>17</b>	<b>0.30</b>
benzo[b]naphtho[2,1-d]thiophene	<0.13	201	<0.07	201	<0.09
cyclopenta[c,d]pyrene	0.14	21	0.08	30	0.10
<b>chrysene</b>	<b>0.48</b>	<b>26</b>	<b>0.36</b>	<b>32</b>	<b>0.44</b>
5-methylchrysene	<0.01	201	<0.01	201	<0.01
<b>benzo[b]fluoranthene</b>	<b>0.40</b>	<b>30</b>	<b>0.32</b>	<b>36</b>	<b>0.39</b>
benzo[jj]fluoranthene	0.21	19	0.15	22	0.24
benzo[k]fluoranthene	0.16	21	0.12	24	0.14
benzo[e]pyrene	0.28	18	0.18	20	0.24
<b>benzo[a]pyrene</b>	<b>0.25</b>	<b>58</b>	<b>0.20</b>	<b>72</b>	<b>0.26</b>
indeno[1,2,3-cd]pyrene	<0.19	201	<0.15	201	<0.19
dibenz[ah]anthracene	<0.07	201	<0.06	201	<0.07
benzo-[g,h,i]perylene	0.20	19	0.15	21	0.19
anthanthrene	<0.1	201	<0.1	201	<0.1
dibenzo[a,l]pyrene	<0.1	201	<0.1	201	<0.1
dibenzo[a,e]pyrene	<0.1	201	<0.1	201	<0.1
dibenzo[a,i]pyrene	<0.1	201	<0.1	201	<0.1
dibenzo[a,h]pyrene	<0.1	201	<0.1	201	<0.1
coronene	<0.1	201	<0.1	201	<0.1
<b>PAH 4 Sum Lower µg/kg</b>	<b>1.49</b>		<b>1.15</b>		<b>1.39</b>
<b>PAH 4 Sum Upper µg/kg</b>	<b>1.49</b>	<b>27</b>	<b>1.15</b>	<b>38</b>	<b>1.39</b>
				<b>29</b>	<b>0.92</b>
					<b>51</b>

OEC Sample No.	22318	22319	22320	22321			
FERA LIMS No.	S13-064063	S13-064064	S13-064065	S13-064066			
Description	Darker Chocolate With Brazil Nuts & Apricots	Chocolate Mint Thins	Chocolate Mint Thins	85% Cocoa Ivory Coast & Ecuador Plain Chocolate			
µg/kg whole weight		U%	U%	U%	U%	U%	U%
acenaphthylene	<0.51	201	<0.51	201	<0.5	201	1.69
acenaphthene	1.62	82	1.07	120	0.67	189	1.02
fluorene	2.85	57	1.35	112	0.86	173	3.12
phenanthrene	10.70	28	10.26	28	10.77	28	22.27
anthracene	0.87	24	0.73	25	0.58	27	1.80
fluoranthene	3.87i	33	2.86i	39	3.31	35	5.88i
benzo[c]fluorene	0.13	26	0.12	27	0.18	24	0.40
pyrene	2.70	39	2.31	44	2.51	41	6.02i
benzo[ghi]fluoranthene	0.30	17	0.21	18	0.28	17	0.82
<b>benz (a) anthracene</b>	<b>0.26</b>	<b>18</b>	<b>0.27</b>	<b>17</b>	<b>0.21</b>	<b>18</b>	<b>0.62</b>
benzo[b]naphtho[2,1-d]thiophene	<0.11	201	<0.16	201	<0.07	201	<0.1
cyclopenta[c,d]pyrene	0.04	52	0.06	37	0.05	43	0.30
<b>chrysene</b>	<b>0.40</b>	<b>30</b>	<b>0.53</b>	<b>25</b>	<b>0.33</b>	<b>34</b>	<b>0.81</b>
5-methylchrysene	<0.01	201	<0.01	201	<0.01	201	<0.01
<b>benzo[b]fluoranthene</b>	<b>0.26</b>	<b>42</b>	<b>0.48</b>	<b>27</b>	<b>0.32</b>	<b>36</b>	<b>0.45</b>
benzo[jj]fluoranthene	0.15	22	0.11	25	0.16	21	0.34
benzo[k]fluoranthene	0.12	24	0.09	28	0.10	26	0.19
benzo[e]pyrene	0.20	20	0.41	18	0.16	21	0.46
<b>benzo[a]pyrene</b>	<b>0.19</b>	<b>76</b>	<b>0.19</b>	<b>76</b>	<b>0.17</b>	<b>84</b>	<b>0.42</b>
indeno[1,2,3-cd]pyrene	<0.13	201	<0.15	201	<0.13	201	0.29
dibenz[ah]anthracene	<0.06	201	<0.1	201	<0.06	201	<0.07
benzo-[g,h,i]perylene	0.12	23	0.21	18	<0.13	201	0.36
anthanthrene	<0.1	201	<0.1	201	<0.1	201	<0.1
dibenzo[a,l]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1
dibenzo[a,e]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1
dibenzo[a,i]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1
dibenzo[a,h]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1
coronene	<0.1	201	<0.1	201	<0.1	201	<0.1
<b>PAH 4 Sum Lower µg/kg</b>	<b>1.11</b>		<b>1.47</b>		<b>1.03</b>		<b>2.30</b>
<b>PAH 4 Sum Upper µg/kg</b>	<b>1.11</b>	<b>40</b>	<b>1.47</b>	<b>29</b>	<b>1.03</b>	<b>44</b>	<b>2.30</b>
							<b>16</b>

OEC Sample No.	22322	22323	22324	22325	
FERA LIMS No.	S13-064067	S13-064068	S13-064069	S13-064070	
Description	85% Cocoa Ivory Coast & Ecuador Plain Chocolate	Finest Ecuadorian 74% Dark Chocolate	Finest Ecuadorian 74% Dark Chocolate	Cocoa Peruvian Gold	
<b>µg/kg whole weight</b>		U%	U%	U%	
acenaphthylene	1.36	78	<0.51	201	<0.51
acenaphthene	1.18	109	1.32	98	0.89
fluorene	2.55	62	1.34	112	1.05
phenanthrene	22.10	23	13.87	25	12.96
anthracene	1.50	22	0.76	25	0.73
fluoranthene	5.59i	27	3.38i	35	3.38i
benzo[c]fluorene	0.45	21	0.22	23	0.19
pyrene	5.58i	26	3.02	36	3.12i
benzo[ghi]fluoranthene	0.74	16	0.36	17	0.39
<b>benz (a) anthracene</b>	<b>0.55</b>	<b>16</b>	<b>0.22</b>	<b>18</b>	<b>0.23</b>
benzo[b]naphtho[2,1-d]thiophene	<0.11	201	<0.09	201	<0.11
cyclopenta[c,d]pyrene	0.22	18	0.06	37	0.04
<b>chrysene</b>	<b>0.74</b>	<b>21</b>	<b>0.30</b>	<b>37</b>	<b>0.33</b>
5-methylchrysene	<0.02	201	<0.01	201	<0.01
<b>benzo[b]fluoranthene</b>	<b>0.46</b>	<b>28</b>	<b>0.26</b>	<b>42</b>	<b>0.29</b>
benzo[jj]fluoranthene	0.31	18	0.16	21	0.17
benzo[k]fluoranthene	0.17	21	0.11	25	0.11
benzo[e]pyrene	0.47	17	0.19	20	0.23
<b>benzo[a]pyrene</b>	<b>0.40</b>	<b>39</b>	<b>0.21</b>	<b>69</b>	<b>0.22</b>
indeno[1,2,3-cd]pyrene	0.28	33	0.15	56	<0.18
dibenz[ah]anthracene	<0.07	201	<0.05	201	<0.05
benzo-[g,h,i]perylene	0.36	17	0.15	21	0.17
anthanthrene	<0.1	201	<0.1	201	<0.1
dibenzo[a,l]pyrene	<0.1	201	<0.1	201	<0.1
dibenzo[a,e]pyrene	<0.1	201	<0.1	201	<0.1
dibenzo[a,i]pyrene	<0.1	201	<0.1	201	<0.1
dibenzo[a,h]pyrene	<0.1	201	<0.1	201	<0.1
coronene	<0.1	201	<0.1	201	<0.1
<b>PAH 4 Sum Lower µg/kg</b>	<b>2.15</b>		<b>0.99</b>		<b>1.07</b>
<b>PAH 4 Sum Upper µg/kg</b>	<b>2.15</b>	<b>18</b>	<b>0.99</b>	<b>44</b>	<b>1.07</b>
				<b>72</b>	<b>0.54</b>
					<b>58</b>

OEC Sample No.	22326	22327	22328	22329				
FERA LIMS No.	S13-064071	S13-064072	S13-064073	S13-064074				
Description	Cocoa Peruvian Gold	Cocoa Ginger & Lime	Cocoa Ginger & Lime	70% Dark Chocolate				
<b>µg/kg whole weight</b>		U%	U%	U%	U%	U%		
acenaphthylene	<0.51	201	<0.51	201	<0.5	201	<0.51	201
acenaphthene	0.95	134	1.14	114	1.01	127	0.95	134
fluorene	0.89	168	1.08	140	1.19	126	1.19	126
phenanthrene	10.09	28	14.46	25	13.36	25	15.47	24
anthracene	0.49	29	0.62	26	0.60	27	0.54	28
fluoranthene	4.48	30	4.16	31	3.85	32	5.80i	27
benzo[c]fluorene	0.19	24	0.22	23	0.19	24	0.29	22
pyrene	6.57i	25	4.04i	30	3.44i	33	8.33i	24
benzo[ghi]fluoranthene	0.67	16	0.47	16	0.40	17	0.96	16
<b>benz (a) anthracene</b>	<b>0.11</b>	<b>24</b>	<b>0.21</b>	<b>18</b>	<b>0.21</b>	<b>18</b>	<b>0.46</b>	<b>16</b>
benzo[b]naphtho[2,1-d]thiophene	<0.1	201	<0.08	201	<0.1	201	<0.11	201
cyclopenta[c,d]pyrene	0.16	20	0.08	30	0.07	33	0.30	17
<b>chrysene</b>	<b>0.17</b>	<b>61</b>	<b>0.28</b>	<b>39</b>	<b>0.31</b>	<b>36</b>	<b>0.56</b>	<b>24</b>
5-methylchrysene	<0.01	201	<0.01	201	<0.01	201	<0.01	201
<b>benzo[b]fluoranthene</b>	<b>0.19</b>	<b>55</b>	<b>0.28</b>	<b>40</b>	<b>0.30</b>	<b>37</b>	<b>0.34</b>	<b>34</b>
benzo[jj]fluoranthene	0.12	24	0.14	22	0.13	23	0.19	20
benzo[k]fluoranthene	0.06	37	0.08	30	0.07	33	0.14	22
benzo[e]pyrene	0.15	22	0.21	19	0.25	19	0.22	19
<b>benzo[a]pyrene</b>	<b>0.11</b>	<b>128</b>	<b>0.15</b>	<b>95</b>	<b>0.14</b>	<b>101</b>	<b>0.24</b>	<b>61</b>
indeno[1,2,3-cd]pyrene	<0.09	201	<0.14	201	<0.13	201	<0.16	201
dibenz[ah]anthracene	<0.05	201	<0.05	201	<0.05	201	<0.05	201
benzo-[g,h,i]perylene	0.10	25	0.13	22	0.13	22	0.14	21
anthanthrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,l]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,e]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,i]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,h]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
coronene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
<b>PAH 4 Sum Lower µg/kg</b>	<b>0.58</b>		<b>0.92</b>		<b>0.96</b>		<b>1.60</b>	
<b>PAH 4 Sum Upper µg/kg</b>	<b>0.58</b>	<b>96</b>	<b>0.92</b>	<b>52</b>	<b>0.96</b>	<b>50</b>	<b>1.60</b>	<b>26</b>

OEC Sample No.	22330	22331	22332	22333				
FERA LIMS No.	S13-064075	S13-064076	S13-064077	S13-064078				
Description	70% Dark Chocolate	Smooth Dark Chocolate	Truly Irresistible Ghanaian Dark Chocolate	Truly Irresistible Ghanaian Dark Chocolate				
<b>µg/kg whole weight</b>		U%	U%	U%				
acenaphthylene	<0.5	201	<0.5	201	<0.51	201	0.66	156
acenaphthene	1.19	108	1.13	113	1.18	110	1.60	82
fluorene	2.29	68	2.15	72	1.84	84	2.41	65
phenanthrene	15.79	24	19.03	23	14.93	25	20.78	23
anthracene	0.95	24	1.29	22	1.04	23	1.39	22
fluoranthene	6.68i	25	5.36i	27	4.38	30	5.70i	27
benzo[c]fluorene	0.32	22	0.45	21	0.25	22	0.40	22
pyrene	10.29i	23	4.34i	29	3.65	32	4.71i	28
benzo[ghi]fluoranthene	0.74	16	0.30	17	0.28	17	0.35	17
<b>benz (a) anthracene</b>	<b>0.44</b>	<b>16</b>	<b>0.21</b>	<b>18</b>	<b>0.22</b>	<b>18</b>	<b>0.27</b>	<b>17</b>
benzo[b]naphtho[2,1-d]thiophene	<0.08	201	<0.07	201	<0.06	201	<0.09	201
cyclopenta[c,d]pyrene	0.42	17	0.12	23	0.12	23	0.10	25
<b>chrysene</b>	<b>0.59</b>	<b>23</b>	<b>0.34</b>	<b>33</b>	<b>0.34</b>	<b>33</b>	<b>0.38</b>	<b>31</b>
5-methylchrysene	<0.01	201	<0.01	201	<0.01	201	<0.01	201
<b>benzo[b]fluoranthene</b>	<b>0.30</b>	<b>37</b>	<b>0.28</b>	<b>40</b>	<b>0.26</b>	<b>42</b>	<b>0.32</b>	<b>36</b>
benzo[jj]fluoranthene	0.19	20	0.20	20	0.16	21	0.22	19
benzo[k]fluoranthene	0.13	23	0.08	30	0.10	26	0.09	28
benzo[e]pyrene	0.23	19	0.15	22	0.18	20	0.18	20
<b>benzo[a]pyrene</b>	<b>0.24</b>	<b>61</b>	<b>0.16</b>	<b>89</b>	<b>0.19</b>	<b>76</b>	<b>0.18</b>	<b>80</b>
indeno[1,2,3-cd]pyrene	<0.14	201	<0.11	201	0.13	64	<0.13	201
dibenz[ah]anthracene	<0.09	201	<0.08	201	<0.08	201	<0.08	201
benzo-[g,h,i]perylene	0.13	22	<0.12	201	0.16	20	0.12	23
anthanthrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,l]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,e]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,i]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,h]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
coronene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
<b>PAH 4 Sum Lower µg/kg</b>	<b>1.57</b>		<b>0.99</b>		<b>1.01</b>		<b>1.15</b>	
<b>PAH 4 Sum Upper µg/kg</b>	<b>1.57</b>	<b>27</b>	<b>0.99</b>	<b>47</b>	<b>1.01</b>	<b>44</b>	<b>1.15</b>	<b>39</b>

OEC Sample No.	22334	22335	22336	22337				
FERA LIMS No.	S13-064079	S13-064080	S13-064081	S13-064082				
Description	Signature 72% Dark Chocolate	Signature 72% Dark Chocolate	75% From Madagascar	75% From Madagascar				
<b>µg/kg whole weight</b>		U%	U%	U%				
acenaphthylene	<0.5	201	<0.5	201	0.58	177	<0.51	201
acenaphthene	1.14	113	1.46	89	1.97	68	1.82	72
fluorene	1.89	81	2.09	74	2.71	59	2.33	67
phenanthrene	17.09	24	17.71	24	18.68	23	18.59	23
anthracene	1.12	23	1.17	23	1.28	22	1.24	23
fluoranthene	4.64	29	4.71	29	4.80	29	5.12	28
benzo[c]fluorene	0.37	22	0.34	22	0.32	22	0.29	22
pyrene	4.39i	29	4.46i	29	4.61i	28	4.79i	28
benzo[ghi]fluoranthene	0.32	17	0.32	17	0.34	17	0.34	17
<b>benz (a) anthracene</b>	<b>0.29</b>	<b>17</b>	<b>0.29</b>	<b>17</b>	<b>0.29</b>	<b>17</b>	<b>0.30</b>	<b>17</b>
benzo[b]naphtho[2,1-d]thiophene	<0.06	201	<0.07	201	<0.07	201	<0.08	201
cyclopenta[c,d]pyrene	0.13	22	0.12	23	0.13	22	0.09	27
<b>chrysene</b>	<b>0.38</b>	<b>31</b>	<b>0.39</b>	<b>30</b>	<b>0.36</b>	<b>32</b>	<b>0.39</b>	<b>30</b>
5-methylchrysene	<0.01	201	<0.01	201	<0.01	201	<0.01	201
<b>benzo[b]fluoranthene</b>	<b>0.33</b>	<b>35</b>	<b>0.34</b>	<b>34</b>	<b>0.31</b>	<b>36</b>	<b>0.32</b>	<b>36</b>
benzo[jj]fluoranthene	0.23	19	0.21	19	0.21	19	0.17	21
benzo[k]fluoranthene	0.13	23	0.13	23	0.14	22	0.14	22
benzo[e]pyrene	0.20	20	0.20	20	0.20	20	0.21	19
<b>benzo[a]pyrene</b>	<b>0.23</b>	<b>63</b>	<b>0.23</b>	<b>63</b>	<b>0.23</b>	<b>63</b>	<b>0.23</b>	<b>63</b>
indeno[1,2,3-cd]pyrene	0.16	52	0.17	50	0.16	52	0.16	52
dibenz[ah]anthracene	<0.09	201	<0.1	201	<0.1	201	<0.1	201
benzo-[g,h,i]perylene	0.17	20	0.18	19	0.17	20	0.17	20
anthanthrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,l]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,e]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,i]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,h]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
coronene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
<b>PAH 4 Sum Lower µg/kg</b>	<b>1.23</b>		<b>1.25</b>		<b>1.19</b>		<b>1.24</b>	
<b>PAH 4 Sum Upper µg/kg</b>	<b>1.23</b>	<b>34</b>	<b>1.25</b>	<b>33</b>	<b>1.19</b>	<b>35</b>	<b>1.24</b>	<b>34</b>

OEC Sample No.	22338	22339	22340	22341				
FERA LIMS No.	S13-064083	S13-064084	S13-064085	S13-064086				
Description	Dark Chocolate From Brazil	Dark Chocolate From Brazil	Trinidad Vintage 2013	Trinidad Vintage 2013				
<b>µg/kg whole weight</b>		U%	U%	U%	U%	U%		
acenaphthylene	<0.42	201	0.26	72	0.81	31	1.11	27
acenaphthene	0.89	128	1.27	56	0.55	122	0.66	102
fluorene	<0.7	201	1.39	87	1.30	95	1.26	98
phenanthrene	11.89	27	10.05	32	10.70	31	8.96	34
anthracene	0.36	44	0.35	99	0.68	54	0.56	64
fluoranthene	3.65	33	3.52	38	4.81	31	3.97i	35
benzo[c]fluorene	0.23	23	0.15	25	0.20	23	0.19	24
pyrene	3.26i	22	3.30i	36	5.09i	28	4.10i	31
benzo[ghi]fluoranthene	0.45	16	0.34	17	0.61	16	0.47	16
<b>benz (a) anthracene</b>	<b>0.17</b>	<b>20</b>	<b>0.18</b>	<b>58</b>	<b>0.73</b>	<b>21</b>	<b>0.60</b>	<b>23</b>
benzo[b]naphtho[2,1-d]thiophene	<0.07	201	<0.08	201	<0.13	201	<0.1	201
cyclopenta[c,d]pyrene	0.07	33	0.08	30	0.13	22	0.14	21
<b>chrysene</b>	<b>0.28</b>	<b>17</b>	<b>0.29</b>	<b>44</b>	<b>0.91</b>	<b>21</b>	<b>0.72</b>	<b>23</b>
5-methylchrysene	<0.01	201	<0.01	201	<0.01	201	<0.01	201
<b>benzo[b]fluoranthene</b>	<b>0.20</b>	<b>53</b>	<b>0.27</b>	<b>98</b>	<b>0.51</b>	<b>54</b>	<b>0.41</b>	<b>66</b>
benzo[jj]fluoranthene	0.13	23	0.20	26	0.32	21	0.26	23
benzo[k]fluoranthene	0.06	37	<0.14	201	0.19	148	0.16	176
benzo[e]pyrene	0.20	20	0.19	55	0.42	29	0.31	36
<b>benzo[a]pyrene</b>	<b>0.13</b>	<b>109</b>	<b>0.14</b>	<b>130</b>	<b>0.40</b>	<b>48</b>	<b>0.34</b>	<b>56</b>
indeno[1,2,3-cd]pyrene	<0.12	201	<0.14	201	0.30	49	0.24	60
dibenz[ah]anthracene	<0.04	201	<0.08	201	<0.09	201	<0.08	201
benzo-[g,h,i]perylene	0.13	22	0.12	52	0.27	27	0.21	33
anthanthrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,l]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,e]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,i]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,h]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
coronene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
<b>PAH 4 Sum Lower µg/kg</b>	<b>0.78</b>		<b>0.88</b>		<b>2.55</b>		<b>2.07</b>	
<b>PAH 4 Sum Upper µg/kg</b>	<b>0.78</b>	<b>61</b>	<b>0.88</b>	<b>89</b>	<b>2.55</b>	<b>22</b>	<b>2.07</b>	<b>29</b>

OEC Sample No.	22342	22343	22344	22345				
FERA LIMS No.	S13-064087	S13-064088	S13-064089	S13-064090				
Description	66% Cocoa	66% Cocoa	64% Cocoa	64% Cocoa				
<b>µg/kg whole weight</b>		U%	U%	U%	U%	U%		
acenaphthylene	0.71	33	0.75	32	0.24	78	0.27	70
acenaphthene	0.90	76	0.89	77	0.75	90	0.79	86
fluorene	1.27	95	1.46	84	1.14	106	1.06	113
phenanthrene	11.12	30	11.03	30	11.21	30	11.48	30
anthracene	0.94	42	0.94	42	0.45	78	0.46	77
fluoranthene	4.51	33	4.62	32	3.74	36	3.67	37
benzo[c]fluorene	0.22	23	0.27	22	0.16	24	0.17	24
pyrene	4.22i	31	4.15i	31	4.28i	31	3.80i	33
benzo[ghi]fluoranthene	0.46	16	0.44	16	0.36	17	0.35	17
<b>benz (a) anthracene</b>	<b>0.46</b>	<b>27</b>	<b>0.48</b>	<b>26</b>	<b>0.31</b>	<b>36</b>	<b>0.34</b>	<b>33</b>
benzo[b]naphtho[2,1-d]thiophene	<0.06	201	<0.08	201	<0.07	201	<0.09	201
cyclopenta[c,d]pyrene	0.13	22	0.17	20	0.11	24	0.10	25
<b>chrysene</b>	<b>0.52</b>	<b>28</b>	<b>0.56</b>	<b>27</b>	<b>0.38</b>	<b>35</b>	<b>0.43</b>	<b>32</b>
5-methylchrysene	<0.01	201	<0.01	201	<0.01	201	<0.01	201
<b>benzo[b]fluoranthene</b>	<b>0.32</b>	<b>83</b>	<b>0.33</b>	<b>81</b>	<b>0.25</b>	<b>105</b>	<b>0.27</b>	<b>98</b>
benzo[jj]fluoranthene	0.22	25	0.23	24	0.15	32	0.15	32
benzo[k]fluoranthene	<0.14	201	<0.14	201	<0.14	201	<0.14	201
benzo[e]pyrene	0.18	58	0.21	51	0.17	61	0.19	55
<b>benzo[a]pyrene</b>	<b>0.22</b>	<b>84</b>	<b>0.23</b>	<b>80</b>	<b>0.16</b>	<b>114</b>	<b>0.18</b>	<b>101</b>
indeno[1,2,3-cd]pyrene	<0.17	201	<0.18	201	<0.15	201	<0.16	201
dibenz[ah]anthracene	<0.08	201	<0.08	201	<0.08	201	<0.08	201
benzo-[g,h,i]perylene	0.13	49	0.13	49	0.13	49	<0.16	201
anthanthrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,l]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,e]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.11	201
dibenzo[a,i]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,h]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
coronene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
<b>PAH 4 Sum Lower µg/kg</b>	<b>1.52</b>		<b>1.60</b>		<b>1.10</b>		<b>1.22</b>	
<b>PAH 4 Sum Upper µg/kg</b>	<b>1.52</b>	<b>44</b>	<b>1.60</b>	<b>41</b>	<b>1.10</b>	<b>69</b>	<b>1.22</b>	<b>59</b>

OEC Sample No.	22346	22347	22348	22349				
FERA LIMS No.	S13-064091	S13-064092	S13-064093	S13-064094				
Description	Ginger Dark Chocolate	Ginger Dark Chocolate	Maya Gold Dark Chocolate	Maya Gold Dark Chocolate				
<b>µg/kg whole weight</b>		U%	U%	U%	U%	U%		
acenaphthylene	0.23i	56	0.18i	70	0.25	52	0.17i	74
acenaphthene	<0.62	201	<0.62	201	<0.62	201	<0.62	201
fluorene	<0.67	201	<0.67	201	<0.67	201	<0.67	201
phenanthrene	7.50	39	7.23	40	7.63	39	7.23	40
anthracene	0.30	57	0.30	57	0.40	45	0.34	52
fluoranthene	2.06	64	2.10	63	2.30	58	2.15	61
benzo[c]fluorene	0.13	26	0.17	24	0.15	25	0.15	25
pyrene	1.79	75	1.73	77	2.00	67	1.90	71
benzo[ghi]fluoranthene	0.19	65	0.17	72	0.22	57	0.22	57
<b>benz (a) anthracene</b>	<b>0.13</b>	<b>64</b>	<b>0.13</b>	<b>64</b>	<b>0.20</b>	<b>43</b>	<b>0.17</b>	<b>50</b>
benzo[b]naphtho[2,1-d]thiophene	<0.08	201	<0.06	201	<0.06	201	<0.06	201
cyclopenta[c,d]pyrene	<0.02	201	0.05	43	0.06	37	0.05	43
<b>chrysene</b>	<b>0.21</b>	<b>59</b>	<b>0.17</b>	<b>72</b>	<b>0.23</b>	<b>55</b>	<b>0.19</b>	<b>65</b>
5-methylchrysene	<0.01	201	<0.01	201	<0.01	201	<0.01	201
<b>benzo[b]fluoranthene</b>	<b>0.13</b>	<b>124</b>	<b>0.13</b>	<b>124</b>	<b>0.15</b>	<b>108</b>	<b>0.14</b>	<b>116</b>
benzo[jj]fluoranthene	0.07	33	0.08	30	0.09	28	0.10	26
benzo[k]fluoranthene	<0.06	201	<0.06	201	<0.06	201	<0.06	201
benzo[e]pyrene	0.12	85	0.08	126	0.11	92	0.09	112
<b>benzo[a]pyrene</b>	<b>0.09</b>	<b>156</b>	<b>0.10</b>	<b>141</b>	<b>0.12</b>	<b>118</b>	<b>0.10</b>	<b>141</b>
indeno[1,2,3-cd]pyrene	<0.08	201	<0.07	201	<0.09	201	<0.08	201
dibenz[ah]anthracene	<0.05	201	<0.05	201	<0.05	201	<0.05	201
benzo-[g,h,i]perylene	0.06	37	0.06	37	0.07	33	0.06	37
anthanthrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,l]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,e]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,i]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,h]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
coronene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
<b>PAH 4 Sum Lower µg/kg</b>	<b>0.56</b>		<b>0.53</b>		<b>0.70</b>		<b>0.60</b>	
<b>PAH 4 Sum Upper µg/kg</b>	<b>0.56</b>	<b>132</b>	<b>0.53</b>	<b>139</b>	<b>0.70</b>	<b>96</b>	<b>0.60</b>	<b>119</b>

OEC Sample No.	22350	22351	22354	22355				
FERA LIMS No.	S13-064095	S13-064096	S13-064097	S13-064098				
Description	Excellence Noir 90% Cocoa	Excellence Noir 90% Cocoa	Excellence 85% Cocoa	Excellence 85% Cocoa				
<b>µg/kg whole weight</b>		U%	U%	U%	U%	U%		
acenaphthylene	0.44	34	0.63	28	0.89	25	0.94	25
acenaphthene	<0.62	201	<0.62	201	0.72	174	1.09	116
fluorene	1.62	85	1.39	99	1.71	81	2.09	67
phenanthrene	15.27	27	15.35	27	18.56	25	22.63	24
anthracene	1.06	26	1.03	26	1.07	26	1.31	24
fluoranthene	5.68i	30	6.15i	29	4.79i	33	5.92i	30
benzo[c]fluorene	0.43	22	0.34	22	0.37	22	0.40	22
pyrene	5.07i	33	5.38i	32	4.03i	38	4.94i	33
benzo[ghi]fluoranthene	0.65	24	0.76	22	0.51	28	0.64	25
<b>benz (a) anthracene</b>	<b>0.58</b>	<b>21</b>	<b>0.57</b>	<b>21</b>	<b>0.40</b>	<b>25</b>	<b>0.49</b>	<b>23</b>
benzo[b]naphtho[2,1-d]thiophene	<0.1	201	<0.15	201	<0.12	201	<0.17	201
cyclopenta[c,d]pyrene	0.21	18	0.05	43	0.18	19	0.19	19
<b>chrysene</b>	<b>0.77</b>	<b>22</b>	<b>0.83</b>	<b>21</b>	<b>0.55</b>	<b>27</b>	<b>0.69</b>	<b>24</b>
5-methylchrysene	0.02	201	0.02	201	0.01	201	<0.02	201
<b>benzo[b]fluoranthene</b>	<b>0.40</b>	<b>43</b>	<b>0.47</b>	<b>38</b>	<b>0.30</b>	<b>56</b>	<b>0.34</b>	<b>50</b>
benzo[jj]fluoranthene	0.29	18	0.26	19	0.26	19	0.25	19
benzo[k]fluoranthene	0.15	82	0.14	87	0.09	134	0.09	134
benzo[e]pyrene	0.30	37	0.44	28	0.22	48	0.22	48
<b>benzo[a]pyrene</b>	<b>0.31</b>	<b>48</b>	<b>0.35</b>	<b>43</b>	<b>0.25</b>	<b>58</b>	<b>0.27</b>	<b>55</b>
indeno[1,2,3-cd]pyrene	<0.21	201	<0.22	201	<0.19	201	<0.21	201
dibenz[ah]anthracene	<0.06	201	<0.09	201	<0.05	201	<0.06	201
benzo-[g,h,i]perylene	0.19	19	0.21	18	0.17	20	0.21	18
anthanthrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,l]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,e]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,i]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,h]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
coronene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
<b>PAH 4 Sum Lower µg/kg</b>	<b>2.06</b>		<b>2.22</b>		<b>1.50</b>		<b>1.79</b>	
<b>PAH 4 Sum Upper µg/kg</b>	<b>2.06</b>	<b>22</b>	<b>2.22</b>	<b>20</b>	<b>1.50</b>	<b>33</b>	<b>1.79</b>	<b>27</b>

OEC Sample No.	22356	22357	22358	22359			
FERA LIMS No.	S13-064099	S13-064100	S13-064101	S13-064102			
Description	Excellence 70% Cocoa	Excellence 70% Cocoa	Fortissima 80% Cocoa	Fortissima 80% Cocoa			
<b>µg/kg whole weight</b>		U%	U%	U%	U%	U%	U%
acenaphthylene	0.25	52	0.30	45	15.99	22	16.38
acenaphthene	<0.62	201	<0.62	201	3.11	48	4.42
fluorene	0.71	190	0.87	155	4.25	38	4.40
phenanthrene	11.63	30	11.66	30	61.01	21	58.99i
anthracene	0.34	52	0.35	50	6.57	21	6.42
fluoranthene	2.82i	49	2.79i	49	18.77	22	18.08
benzo[c]fluorene	0.25	22	0.22	23	0.67	21	0.66
pyrene	2.12	64	2.02	67	21.06i	22	19.97i
benzo[ghi]fluoranthene	0.18	69	0.20	62	2.68	16	2.51
<b>benz (a) anthracene</b>	<b>0.07</b>	<b>115</b>	<b>0.07</b>	<b>115</b>	<b>2.33</b>	<b>16</b>	<b>2.30</b>
benzo[b]naphtho[2,1-d]thiophene	<0.08	201	<0.07	201	<0.1	25	<0.11
cyclopenta[c,d]pyrene	0.03	69	<0.02	201	1.06	16	1.06
<b>chrysene</b>	<b>0.13</b>	<b>94</b>	<b>0.11</b>	<b>110</b>	<b>2.99</b>	<b>16</b>	<b>2.95</b>
5-methylchrysene	<0.01	201	<0.01	201	<0.01	201	<0.01
<b>benzo[b]fluoranthene</b>	<b>0.10</b>	<b>161</b>	<b>0.09</b>	<b>179</b>	<b>2.11</b>	<b>18</b>	<b>2.01</b>
benzo[jj]fluoranthene	0.10	26	0.08	30	1.53	17	1.41
benzo[k]fluoranthene	<0.06	201	<0.06	201	1.03	17	0.94
benzo[e]pyrene	0.05	201	<0.05	201	2.21	17	2.25
<b>benzo[a]pyrene</b>	<b>0.08</b>	<b>176</b>	<b>0.07</b>	<b>201</b>	<b>2.54</b>	<b>18</b>	<b>2.49</b>
indeno[1,2,3-cd]pyrene	<0.06	201	<0.06	201	1.26	17	1.24
dibenz[ah]anthracene	<0.05	201	<0.05	201	<0.13	201	<0.12
benzo-[g,h,i]perylene	0.04	52	0.04	52	1.46	16	1.42
anthanthrene	<0.1	201	<0.1	201	<0.1	201	<0.1
dibenzo[a,l]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1
dibenzo[a,e]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1
dibenzo[a,i]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1
dibenzo[a,h]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1
coronene	<0.1	201	<0.1	201	<0.1	201	<0.1
<b>PAH 4 Sum Lower µg/kg</b>	<b>0.38</b>		<b>0.27</b>		<b>9.97</b>		<b>9.75</b>
<b>PAH 4 Sum Upper µg/kg</b>	<b>0.38</b>	<b>222</b>	<b>0.34</b>	<b>263</b>	<b>9.97</b>	<b>5</b>	<b>9.75</b>
							<b>5</b>

OEC Sample No.	22360	22361	22362	22363				
FERA LIMS No.	S13-064103	S13-064104	S13-064105	S13-064106				
Description	Vanuatu Amelonado 75% Cocoa	Vanuatu Amelonado 75% Cocoa	Chuao 70% Chocoa	Chuao 70% Chocoa				
<b>µg/kg whole weight</b>		U%	U%	U%	U%	U%		
acenaphthylene	13.64	22	12.76	22	0.63	157	0.56	33
acenaphthene	1.35	101	1.82	77	1.24	110	1.99	24
fluorene	9.91	25	9.56	25	1.35	104	1.79	103
phenanthrene	78.03i	21	76.76i	21	13.27	28	12.59	35
anthracene	14.43	21	14.14	21	0.47	40	0.43	196
fluoranthene	27.51i	21	26.88i	21	3.29	38	3.24	51
benzo[c]fluorene	1.13	21	1.55	21	0.20	23	0.19	24
pyrene	26.97i	21	26.42i	21	4.38i	31	4.59i	40
benzo[ghi]fluoranthene	3.57	16	3.36	16	0.42	17	0.41	33
<b>benz (a) anthracene</b>	<b>4.39</b>	<b>16</b>	<b>4.31</b>	<b>16</b>	<b>0.17</b>	<b>20</b>	<b>0.18</b>	<b>19</b>
benzo[b]naphtho[2,1-d]thiophene	<0.11	201	<0.1	201	<0.11	201	<0.09	201
cyclopenta[c,d]pyrene	0.78	16	0.93	16	<0.04	201	0.10	25
<b>chrysene</b>	<b>4.68</b>	<b>16</b>	<b>4.57</b>	<b>16</b>	<b>0.24</b>	<b>45</b>	<b>0.23</b>	<b>38</b>
5-methylchrysene	<0.01	201	<0.01	201	<0.01	201	<0.01	201
<b>benzo[b]fluoranthene</b>	<b>1.82</b>	<b>18</b>	<b>1.78</b>	<b>18</b>	<b>0.19</b>	<b>55</b>	<b>0.20</b>	<b>43</b>
benzo[jj]fluoranthene	1.33	17	1.24	17	0.10	26	0.09	90
benzo[k]fluoranthene	0.79	17	0.81	17	0.05	43	0.07	33
benzo[e]pyrene	1.46	18	1.43	18	0.15	56	0.13	23
<b>benzo[a]pyrene</b>	<b>1.71</b>	<b>19</b>	<b>1.79</b>	<b>19</b>	<b>0.10</b>	<b>141</b>	<b>0.11</b>	<b>128</b>
indeno[1,2,3-cd]pyrene	0.84	18	0.83	19	<0.08	201	<0.09	201
dibenz[ah]anthracene	<0.13	201	<0.13	201	<0.04	201	<0.03	201
benzo-[g,h,i]perylene	0.76	16	0.78	16	0.11	24	0.12	23
anthanthrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,l]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,e]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,i]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,h]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
coronene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
<b>PAH 4 Sum Lower µg/kg</b>	<b>12.60</b>		<b>12.45</b>		<b>0.70</b>		<b>0.72</b>	
<b>PAH 4 Sum Upper µg/kg</b>	<b>12.60</b>	<b>5</b>	<b>12.45</b>	<b>5</b>	<b>0.70</b>	<b>80</b>	<b>0.72</b>	<b>71</b>

OEC Sample No.	22364	22365	22366	22367
FERA LIMS No.	S13-064107	S13-064108	S13-064109	S13-064110
Description	Tuscano Black 63% Chocoa	Tuscany Tuscano Black 63% Chocoa	Mokaya B10 Organic	Mokaya B10 Organic
<b>µg/kg whole weight</b>		U%	U%	U%
acenaphthylene	<0.49	201	0.53	186
acenaphthene	1.46	94	1.22	112
fluorene	1.26	112	1.28	108
phenanthrene	10.02	32	9.71	32
anthracene	0.24	70	0.25	67
fluoranthene	2.57i	46	2.61i	46
benzo[c]fluorene	0.20	23	0.25	22
pyrene	2.37i	46	2.52i	44
benzo[ghi]fluoranthene	0.22	18	0.24	18
<b>benz (a) anthracene</b>	<b>0.09</b>	<b>27</b>	<b>0.09</b>	<b>27</b>
benzo[b]naphtho[2,1-d]thiophene	<0.11	201	<0.1	201
cyclopenta[c,d]pyrene	<0.03	201	0.03	69
<b>chrysene</b>	<b>0.15</b>	<b>69</b>	<b>0.13</b>	<b>79</b>
5-methylchrysene	<0.01	201	<0.01	201
<b>benzo[b]fluoranthene</b>	<b>0.15</b>	<b>69</b>	<b>0.14</b>	<b>73</b>
benzo[jj]fluoranthene	0.09	28	0.10	26
benzo[k]fluoranthene	0.03	69	0.02	101
benzo[e]pyrene	0.07	116	0.06	134
<b>benzo[a]pyrene</b>	<b>&lt;0.07</b>	<b>201</b>	<b>&lt;0.07</b>	<b>201</b>
indeno[1,2,3-cd]pyrene	<0.06	201	<0.06	201
dibenz[ah]anthracene	<0.04	201	<0.04	201
benzo-[g,h,i]perylene	0.06	37	0.05	43
anthanthrene	<0.1	201	<0.1	201
dibenzo[a,l]pyrene	<0.1	201	<0.1	201
dibenzo[a,e]pyrene	<0.1	201	<0.1	201
dibenzo[a,i]pyrene	<0.1	201	<0.1	201
dibenzo[a,h]pyrene	<0.1	201	<0.1	201
coronene	<0.1	201	<0.1	201
<b>PAH 4 Sum Lower µg/kg</b>	<b>0.39</b>	<b>0.36</b>	<b>0.74</b>	<b>0.72</b>
<b>PAH 4 Sum Upper µg/kg</b>	<b>0.46</b>	<b>143</b>	<b>0.43</b>	<b>155</b>
			<b>0.74</b>	<b>70</b>
				<b>0.72</b>
				<b>75</b>

OEC Sample No.	22368	22369	22370	22371				
FERA LIMS No.	S13-064111	S13-064112	S13-064113	S13-064114				
Description	Dark Chocolate 70% Trio of Madagascan Peppers	Dark Chocolate 70% Trio of Madagascan Peppers	Grand Noir 85% Chocoaa	Grand Noir 85% Chocoaa				
<b>µg/kg whole weight</b>		U%	U%	U%	U%	U%		
acenaphthylene	0.73	30	0.89	28	1.25	25	1.11	25
acenaphthene	<0.68	201	<0.68	201	<0.68	201	<0.68	201
fluorene	1.20	122	1.25	117	1.68	88	1.72	87
phenanthrene	18.19	24	18.62	24	19.57	24	20.92	24
anthracene	0.93	25	0.96	24	1.15	23	1.18	23
fluoranthene	6.32	26	7.46	25	6.15	26	6.20i	26
benzo[c]fluorene	0.47	21	0.55	21	0.37	22	0.32	22
pyrene	7.96i	24	9.78i	23	5.42i	26	5.26i	26
benzo[ghi]fluoranthene	2.16	16	2.94	16	0.73	16	0.73	16
<b>benz (a) anthracene</b>	<b>1.52</b>	<b>16</b>	<b>1.99</b>	<b>16</b>	<b>0.62</b>	<b>16</b>	<b>0.56</b>	<b>16</b>
benzo[b]naphtho[2,1-d]thiophene	<0.09	201	<0.1	201	<0.14	201	<0.13	201
cyclopenta[c,d]pyrene	3.19	16	3.25	16	0.22	18	0.21	18
<b>chrysene</b>	<b>1.64</b>	<b>17</b>	<b>1.95</b>	<b>17</b>	<b>0.77</b>	<b>20</b>	<b>0.71</b>	<b>21</b>
5-methylchrysene	<0.01	201	<0.01	201	<0.01	201	<0.01	201
<b>benzo[b]fluoranthene</b>	<b>1.13</b>	<b>19</b>	<b>1.49</b>	<b>18</b>	<b>0.44</b>	<b>28</b>	<b>0.43</b>	<b>29</b>
benzo[jj]fluoranthene	0.98	17	1.26	17	0.30	18	0.28	18
benzo[k]fluoranthene	0.52	17	0.71	17	0.15	22	0.14	22
benzo[e]pyrene	1.04	17	1.35	17	0.30	18	0.30	18
<b>benzo[a]pyrene</b>	<b>1.60</b>	<b>19</b>	<b>2.12</b>	<b>18</b>	<b>0.32</b>	<b>47</b>	<b>0.29</b>	<b>51</b>
indeno[1,2,3-cd]pyrene	0.97	18	1.24	17	0.19	45	0.18	47
dibenz[ah]anthracene	<0.11	201	0.11	24	<0.06	201	<0.05	201
benzo-[g,h,i]perylene	1.06	16	1.36	16	0.21	18	0.20	19
anthanthrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,l]pyrene	<0.1	201	<0.1	167	<0.1	201	<0.1	201
dibenzo[a,e]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,i]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,h]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
coronene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
<b>PAH 4 Sum Lower µg/kg</b>	<b>5.89</b>		<b>7.55</b>		<b>2.15</b>		<b>1.99</b>	
<b>PAH 4 Sum Upper µg/kg</b>	<b>5.89</b>	<b>7</b>	<b>7.55</b>	<b>6</b>	<b>2.15</b>	<b>18</b>	<b>1.99</b>	<b>20</b>

OEC Sample No.	22372	22373	22374	22375				
FERA LIMS No.	S13-064115	S13-064116	S13-064117	S13-064118				
Description	Organic 70% Dark Chocolate	Organic 70% Dark Chocolate	Pure Dark Chocolate Powder	Pure Dark Chocolate Powder				
<b>µg/kg whole weight</b>		U%	U%	U%	U%	U%		
acenaphthylene	0.55	33	0.63	33	1.63	23	0.95	27
acenaphthene	1.27	27	<0.68	201	<0.68	201	<0.68	201
fluorene	<0.93	201	0.82	177	2.24	68	1.93	78
phenanthrene	10.21	40	11.02	29	17.16	25	16.42	25
anthracene	0.72	119	0.81	26	0.94	25	0.95	25
fluoranthene	3.71	46	3.93	33	4.46i	30	4.37	31
benzo[c]fluorene	0.20	23	0.23	23	0.22	23	0.23	23
pyrene	3.40i	52	3.94i	30	3.59i	31	3.42i	32
benzo[ghi]fluoranthene	0.47	30	0.50	16	0.41	17	0.40	17
<b>benz (a) anthracene</b>	<b>0.31</b>	<b>17</b>	<b>0.31</b>	<b>17</b>	<b>0.30</b>	<b>17</b>	<b>0.30</b>	<b>17</b>
benzo[b]naphtho[2,1-d]thiophene	<0.03	201	<0.04	201	<0.08	201	<0.07	201
cyclopenta[c,d]pyrene	0.14	21	0.19	19	0.12	23	0.09	27
<b>chrysene</b>	<b>0.37</b>	<b>27</b>	<b>0.39</b>	<b>30</b>	<b>0.42</b>	<b>29</b>	<b>0.39</b>	<b>30</b>
5-methylchrysene	<0.01	201	<0.01	201	<0.01	201	<0.01	201
<b>benzo[b]fluoranthene</b>	<b>0.18</b>	<b>48</b>	<b>0.17</b>	<b>61</b>	<b>0.28</b>	<b>40</b>	<b>0.27</b>	<b>41</b>
benzo[jj]fluoranthene	0.12	69	0.10	26	0.19	20	0.17	21
benzo[k]fluoranthene	0.07	33	0.06	37	0.09	28	0.09	28
benzo[e]pyrene	0.12	24	0.11	25	0.17	21	0.17	21
<b>benzo[a]pyrene</b>	<b>0.12</b>	<b>118</b>	<b>0.14</b>	<b>101</b>	<b>0.17</b>	<b>84</b>	<b>0.18</b>	<b>80</b>
indeno[1,2,3-cd]pyrene	<0.08	201	<0.08	201	<0.15	201	0.13	64
dibenz[ah]anthracene	<0.03	201	<0.03	201	<0.05	201	<0.05	201
benzo-[g,h,i]perylene	0.08	30	0.07	33	0.14	21	0.14	21
anthanthrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,l]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,e]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,i]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,h]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
coronene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
<b>PAH 4 Sum Lower µg/kg</b>	<b>0.98</b>		<b>1.01</b>		<b>1.17</b>		<b>1.14</b>	
<b>PAH 4 Sum Upper µg/kg</b>	<b>0.98</b>	<b>50</b>	<b>1.01</b>	<b>50</b>	<b>1.17</b>	<b>39</b>	<b>1.14</b>	<b>40</b>

OEC Sample No.	22376	22377	22378	22379				
FERA LIMS No.	S13-064119	S13-064120	S13-064121	S13-064122				
Description	Cacao Venezuelan Gold	Cacao Venezuelan Gold	Cacao Luscious Orange	Cacao Luscious Orange				
<b>µg/kg whole weight</b>		U%	U%	U%				
acenaphthylene	0.34	36	0.28	41	0.33	37	0.19i	57
acenaphthene	1.51	92	0.74	185	<0.68	201	<0.68	201
fluorene	2.39	65	1.88	81	0.76	193	<0.74	201
phenanthrene	12.65	28	11.99	29	10.12	31	9.88	32
anthracene	0.42	35	0.39	37	0.35	40	0.33	42
fluoranthene	2.70	51	2.47	54	2.96	46	2.92	47
benzo[c]fluorene	0.12	27	0.13	26	0.19	24	0.20	23
pyrene	3.29i	39	2.99i	42	2.57	47	2.57	47
benzo[ghi]fluoranthene	0.37	17	0.33	17	0.29	17	0.31	17
<b>benz (a) anthracene</b>	<b>0.07</b>	<b>33</b>	<b>0.08</b>	<b>30</b>	<b>0.06</b>	<b>37</b>	<b>0.06</b>	<b>37</b>
benzo[b]naphtho[2,1-d]thiophene	<0.06	201	<0.05	201	<0.04	201	<0.03	201
cyclopenta[c,d]pyrene	0.06	37	0.06	37	0.05	43	0.04	52
<b>chrysene</b>	<b>0.09</b>	<b>90</b>	<b>0.10</b>	<b>82</b>	<b>0.09</b>	<b>27</b>	<b>0.08</b>	<b>30</b>
5-methylchrysene	<0.01	201	<0.01	201	<0.01	201	<0.01	201
<b>benzo[b]fluoranthene</b>	<b>0.14</b>	<b>22</b>	<b>0.15</b>	<b>22</b>	<b>0.19</b>	<b>20</b>	<b>0.18</b>	<b>20</b>
benzo[jj]fluoranthene	0.06	37	0.08	30	0.10	26	0.10	26
benzo[k]fluoranthene	<0.04	201	0.04	201	<0.04	201	<0.04	201
benzo[e]pyrene	0.10	26	0.14	22	0.07	33	0.07	33
<b>benzo[a]pyrene</b>	<b>&lt;0.08</b>	<b>201</b>	<b>0.10</b>	<b>161</b>	<b>&lt;0.08</b>	<b>201</b>	<b>&lt;0.08</b>	<b>201</b>
indeno[1,2,3-cd]pyrene	<0.1	201	<0.12	201	<0.08	201	<0.08	201
dibenz[ah]anthracene	<0.04	201	<0.04	201	<0.04	201	<0.04	201
benzo-[g,h,i]perylene	0.09	27	0.13	22	0.06	37	0.06	37
anthanthrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,l]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,e]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,i]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,h]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
coronene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
<b>PAH 4 Sum Lower µg/kg</b>	<b>0.30</b>	<b>0.43</b>	<b>0.34</b>	<b>0.32</b>				
<b>PAH 4 Sum Upper µg/kg</b>	<b>0.38</b>	<b>168</b>	<b>0.43</b>	<b>135</b>	<b>0.42</b>	<b>140</b>	<b>0.40</b>	<b>147</b>

OEC Sample No.	22380	22381	22382	22383				
FERA LIMS No.	S13-064123	S13-064124	S13-064125	S13-064126				
Description	Organic 71% Cocoa	Organic 71% Cocoa	70% Dark Chocolate with Raspberries	70% Dark Chocolate with Raspberries				
<b>µg/kg whole weight</b>		U%	U%	U%	U%	U%		
acenaphthylene	<0.13	201	<0.13	201	0.46	30	0.50	29
acenaphthene	<0.68	201	<0.67	201	<0.68	201	<0.68	201
fluorene	<0.74	201	<0.73	201	<0.74	201	0.73	201
phenanthrene	5.80	46	5.74	46	13.28	28	13.07	28
anthracene	0.33	42	0.34	41	0.45	34	0.49	32
fluoranthene	1.51	85	1.45	87	3.38	42	3.40	42
benzo[c]fluorene	0.07	35	0.07	35	0.28	22	0.23	23
pyrene	0.95	116	0.93	116	2.70i	45	2.53	48
benzo[ghi]fluoranthene	0.07	33	0.06	37	0.30	17	0.30	17
<b>benz (a) anthracene</b>	<b>0.13</b>	<b>22</b>	<b>0.12</b>	<b>23</b>	<b>0.15</b>	<b>21</b>	<b>0.15</b>	<b>21</b>
benzo[b]naphtho[2,1-d]thiophene	<0.04	201	<0.03	201	<0.06	201	<0.06	201
cyclopenta[c,d]pyrene	<0.01	201	<0.01	201	0.06	37	<0.05	201
<b>chrysene</b>	<b>0.13</b>	<b>22</b>	<b>0.11</b>	<b>24</b>	<b>0.22</b>	<b>18</b>	<b>0.21</b>	<b>18</b>
5-methylchrysene	<0.01	201	<0.01	201	<0.01	201	<0.01	201
<b>benzo[b]fluoranthene</b>	<b>0.11</b>	<b>25</b>	<b>0.09</b>	<b>28</b>	<b>0.25</b>	<b>19</b>	<b>0.22</b>	<b>19</b>
benzo[jj]fluoranthene	0.05	43	0.05	43	0.14	22	0.15	22
benzo[k]fluoranthene	<0.04	201	<0.04	201	0.05	161	0.05	161
benzo[e]pyrene	0.07	33	0.08	30	0.13	23	0.13	23
<b>benzo[a]pyrene</b>	<b>&lt;0.08</b>	<b>201</b>	<b>0.08</b>	<b>201</b>	<b>0.11</b>	<b>146</b>	<b>0.11</b>	<b>146</b>
indeno[1,2,3-cd]pyrene	<0.1	201	<0.08	201	<0.11	201	<0.1	201
dibenz[ah]anthracene	<0.04	201	<0.04	201	<0.04	201	<0.04	201
benzo-[g,h,i]perylene	0.11	24	0.10	25	0.10	25	0.09	27
anthanthrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,l]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,e]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,i]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,h]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
coronene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
<b>PAH 4 Sum Lower µg/kg</b>	<b>0.37</b>		<b>0.40</b>		<b>0.73</b>		<b>0.69</b>	
<b>PAH 4 Sum Upper µg/kg</b>	<b>0.45</b>	<b>130</b>	<b>0.40</b>	<b>146</b>	<b>0.73</b>	<b>70</b>	<b>0.69</b>	<b>74</b>

OEC Sample No.	22384	22385	22386	22387				
FERA LIMS No.	S13-064127	S13-064128	S13-064129	S13-064130				
Description	Peruvian Dark Chocolate with Sweetened Dried Cranberries	Peruvian Dark Chocolate with Sweetened Dried Cranberries	70% Dark Choclate Intensely Rich	70% Dark Choclate Intensely Rich				
µg/kg whole weight	U%	U%	U%	U%				
acenaphthylene	<0.16	201	0.13	80	0.59	144	0.54	157
acenaphthene	<0.67	201	<0.68	201	0.62	182	0.60	188
fluorene	<0.73	201	<0.74	201	1.20	119	1.20	119
phenanthrene	6.59	41	6.16	44	16.37	25	15.56	25
anthracene	0.22	58	0.18	70	0.67	30	0.55	33
fluoranthene	2.14	61	2.07	63	4.04i	31	3.93i	32
benzo[c]fluorene	0.14	25	0.11	28	0.27	22	0.25	22
pyrene	1.68	67	1.60	71	3.11i	22	3.09i	22
benzo[ghi]fluoranthene	0.24	18	0.21	18	0.33	17	0.34	17
<b>benz (a) anthracene</b>	<b>0.09</b>	<b>27</b>	<b>0.08</b>	<b>30</b>	<b>0.19</b>	<b>19</b>	<b>0.17</b>	<b>20</b>
benzo[b]naphtho[2,1-d]thiophene	<0.02	201	<0.02	201	<0.09	201	<0.08	201
cyclopenta[c,d]pyrene	0.06	37	<0.05	201	0.08	30	0.09	27
<b>chrysene</b>	<b>0.13</b>	<b>22</b>	<b>0.13</b>	<b>22</b>	<b>0.31</b>	<b>30</b>	<b>0.27</b>	<b>34</b>
5-methylchrysene	<0.01	201	<0.01	201	<0.01	201	<0.01	201
<b>benzo[b]fluoranthene</b>	<b>0.15</b>	<b>22</b>	<b>0.16</b>	<b>21</b>	<b>0.27</b>	<b>41</b>	<b>0.24</b>	<b>45</b>
benzo[jj]fluoranthene	0.10	26	0.08	30	0.19	20	0.17	21
benzo[k]fluoranthene	0.05	161	<0.04	201	0.06	37	0.06	37
benzo[e]pyrene	0.10	26	0.11	25	0.17	21	0.13	23
<b>benzo[a]pyrene</b>	<b>0.11</b>	<b>146</b>	<b>0.11</b>	<b>146</b>	<b>0.14</b>	<b>101</b>	<b>0.12</b>	<b>118</b>
indeno[1,2,3-cd]pyrene	<0.12	201	0.09	90	<0.13	201	<0.12	201
dibenz[ah]anthracene	<0.04	201	<0.04	201	<0.05	201	<0.04	201
benzo-[g,h,i]perylene	0.11	24	0.10	25	0.13	22	0.11	24
anthanthrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,l]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,e]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,i]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,h]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
coronene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
<b>PAH 4 Sum Lower µg/kg</b>	<b>0.48</b>	<b>0.48</b>	<b>0.91</b>		<b>0.80</b>			
<b>PAH 4 Sum Upper µg/kg</b>	<b>0.48</b>	<b>105</b>	<b>0.48</b>	<b>105</b>	<b>0.91</b>	<b>52</b>	<b>0.80</b>	<b>63</b>

OEC Sample No.	22389	22390	22391	22388				
FERA LIMS No.	S13-064132	S13-064133	S13-064134	S13-064131				
Description	Ecuadorian Dark Chocolate	Ecuadorian Dark Chocolate	Smooth Dark Chocolate	Smooth Dark Chocolate				
<b>µg/kg whole weight</b>								
acenaphthylene	0.54	157	<0.42	201	3.80	31	3.71	31
acenaphthene	0.95	120	0.65	174	2.55	49	2.58	48
fluorene	1.10	129	0.97	146	3.88	42	3.58	44
phenanthrene	18.11	24	18.81	24	29.71	22	29.68	22
anthracene	1.62	23	1.69	23	2.97	22	3.06	22
fluoranthene	10.51i	23	10.32i	23	8.57i	24	8.98i	23
benzo[c]fluorene	0.44	22	0.54	21	0.44	22	0.41	22
pyrene	8.73i	21	8.75i	21	7.65i	21	7.56i	21
benzo[ghi]fluoranthene	0.92	16	0.96	16	1.02	16	0.96	16
<b>benz (a) anthracene</b>	<b>1.83</b>	<b>16</b>	<b>1.88</b>	<b>16</b>	<b>0.96</b>	<b>16</b>	<b>0.97</b>	<b>16</b>
benzo[b]naphtho[2,1-d]thiophene	0.54	16	0.53	16	0.11	24	0.11	24
cyclopenta[c,d]pyrene	0.13	22	0.20	19	0.33	17	0.31	17
<b>chrysene</b>	<b>1.97</b>	<b>16</b>	<b>1.89</b>	<b>16</b>	<b>1.21</b>	<b>16</b>	<b>1.18</b>	<b>16</b>
5-methylchrysene	<0.01	201	<0.01	201	<0.01	201	<0.01	201
<b>benzo[b]fluoranthene</b>	<b>1.11</b>	<b>19</b>	<b>1.06</b>	<b>19</b>	<b>0.51</b>	<b>26</b>	<b>0.52</b>	<b>26</b>
benzo[j]fluoranthene	0.54	17	0.57	17	0.34	18	0.35	18
benzo[k]fluoranthene	0.48	17	0.50	17	0.18	20	0.19	20
benzo[e]pyrene	0.96	17	0.90	17	0.43	18	0.46	17
<b>benzo[a]pyrene</b>	<b>0.96</b>	<b>22</b>	<b>0.96</b>	<b>22</b>	<b>0.44</b>	<b>36</b>	<b>0.44</b>	<b>36</b>
indeno[1,2,3-cd]pyrene	0.65	16	0.65	16	0.29	17	0.29	17
dibenz[ah]anthracene	<0.18	201	<0.15	201	<0.07	201	<0.06	201
benzo-[g,h,i]perylene	0.61	16	0.62	16	0.29	17	0.30	17
anthanthrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,l]pyrene	<0.1	201	<0.1	144	<0.1	201	<0.1	201
dibenzo[a,e]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,i]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,h]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
coronene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
<b>PAH 4 Sum Lower µg/kg</b>	<b>5.87</b>		<b>5.79</b>		<b>3.12</b>		<b>3.11</b>	
<b>PAH 4 Sum Upper µg/kg</b>	<b>5.87</b>	<b>7</b>	<b>5.79</b>	<b>7</b>	<b>3.12</b>	<b>12</b>	<b>3.11</b>	<b>12</b>

**Table 3. PAH concentrations - µg/kg fat weight**

OEC Sample No.	22290	22291	22292	22293
FERA LIMS No.	S13-064035	S13-064036	S13-064037	S13-064038
Description	Smooth Dark Chocolate	Organic Mint 54% Drinking Chocolate	Organic Mint 54% Drinking Chocolate	74% Dark Chocolate with Mayan Spice
<b>µg/kg fat weight</b>		U%	U%	U%
acenaphthylene	1.54	195	1.43	183
acenaphthene	<1.86	201	<1.63	201
fluorene	2.59	170	2.24	172
phenanthrene	36.36	26	30.14	27
anthracene	1.62	27	1.79	26
fluoranthene	9.69	36	8.47	36
benzo[c]fluorene	0.61	22	0.57	22
pyrene	8.03	38	7.88	36
benzo[ghi]fluoranthene	0.99	17	1.01	17
<b>benz (a) anthracene</b>	<b>0.62</b>	<b>19</b>	<b>0.64</b>	<b>18</b>
benzo[b]naphtho[2,1-d]thiophene	0.20	34	0.15	43
cyclopenta[c,d]pyrene	0.23	18	0.54	16
<b>chrysene</b>	<b>0.88</b>	<b>38</b>	<b>0.81</b>	<b>36</b>
5-methylchrysene	<0.02	201	<0.02	201
<b>benzo[b]fluoranthene</b>	<b>0.68</b>	<b>47</b>	<b>0.52</b>	<b>53</b>
benzo[j]fluoranthene	0.46	19	0.34	18
benzo[k]fluoranthene	0.20	26	0.16	30
benzo[e]pyrene	0.48	24	0.39	23
<b>benzo[a]pyrene</b>	<b>0.44</b>	<b>92</b>	<b>0.36</b>	<b>96</b>
indeno[1,2,3-cd]pyrene	<0.44	201	<0.28	201
dibenz[ah]anthracene	<0.13	201	<0.12	201
benzo-[g,h,i]perylene	0.44	21	0.26	28
anthanthrene	<0.1	201	<0.1	201
dibenzo[a,l]pyrene	<0.1	201	<0.1	201
dibenzo[a,e]pyrene	<0.1	201	<0.1	201
dibenzo[a,i]pyrene	<0.1	201	<0.1	201
dibenzo[a,h]pyrene	<0.1	201	<0.1	201
coronene	<0.1	201	<0.1	201
<b>PAH 4 Sum Lower µg/kg</b>	<b>2.62</b>	<b>2.33</b>	<b>2.37</b>	<b>2.23</b>
<b>PAH 4 Sum Upper µg/kg</b>	<b>2.62</b>	<b>31</b>	<b>2.33</b>	<b>33</b>

OEC Sample No.	22294	22295	22296	22297				
FERA LIMS No.	S13-064039	S13-064040	S13-064041	S13-064042				
Description	74% Dark Chocolate with Mayan Spice	74% Dark Forest Dark Chocolate with Forest Fruits	74% Dark Forest Dark Chocolate with Forest Fruits	74% Raspberry Dark Chocolate with Raspberry				
<b>µg/kg fat weight</b>	U%	U%	U%	U%				
acenaphthylene	<1.12	201	<1.2	201	<1.28	201	<1.24	201
acenaphthene	<1.4	201	<1.51	201	<1.61	201	<1.56	201
fluorene	2.00	165	<1.77	201	1.91	198	1.93	191
phenanthrene	29.49	26	25.35	28	27.15	28	27.08	27
anthracene	1.42	26	1.15	30	1.28	28	1.33	28
fluoranthene	10.74	29	8.27	34	8.98	34	8.47	35
benzo[c]fluorene	0.65	22	0.73	22	0.63	22	0.70	22
pyrene	12.81i	26	8.46i	32	9.08i	32	7.91	34
benzo[ghi]fluoranthene	1.38	16	0.97	16	0.94	16	0.97	16
<b>benz (a) anthracene</b>	<b>0.55</b>	<b>17</b>	<b>0.49</b>	<b>18</b>	<b>0.55</b>	<b>17</b>	<b>0.52</b>	<b>18</b>
benzo[b]naphtho[2,1-d]thiophene	0.16	30	0.10	62	0.16	41	0.10	62
cyclopenta[c,d]pyrene	0.44	16	0.33	17	0.33	17	0.20	19
<b>chrysene</b>	<b>0.75</b>	<b>33</b>	<b>0.64</b>	<b>41</b>	<b>0.77</b>	<b>37</b>	<b>0.68</b>	<b>39</b>
5-methylchrysene	<0.01	201	<0.01	201	<0.02	201	<0.01	201
<b>benzo[b]fluoranthene</b>	<b>0.54</b>	<b>44</b>	<b>0.51</b>	<b>50</b>	<b>0.59</b>	<b>47</b>	<b>0.56</b>	<b>46</b>
benzo[jj]fluoranthene	0.42	18	0.37	18	0.41	18	0.41	18
benzo[k]fluoranthene	0.16	30	0.14	33	0.16	30	0.16	30
benzo[e]pyrene	0.37	23	0.33	25	0.42	22	0.37	23
<b>benzo[a]pyrene</b>	<b>0.32</b>	<b>95</b>	<b>0.32</b>	<b>101</b>	<b>0.38</b>	<b>91</b>	<b>0.36</b>	<b>96</b>
indeno[1,2,3-cd]pyrene	<0.27	201	<0.26	201	<0.29	201	<0.28	201
dibenz[ah]anthracene	<0.1	201	<0.11	201	<0.11	201	<0.11	201
benzo-[g,h,i]perylene	0.23	24	0.24	23	0.26	22	0.25	22
anthanthrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,l]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,e]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,i]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,h]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
coronene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
<b>PAH 4 Sum Lower µg/kg</b>	<b>2.16</b>	<b>1.96</b>	<b>2.29</b>	<b>2.12</b>				
<b>PAH 4 Sum Upper µg/kg</b>	<b>2.16</b>	<b>33</b>	<b>1.96</b>	<b>39</b>	<b>2.29</b>	<b>33</b>	<b>2.12</b>	<b>36</b>

OEC Sample No.	22298	22299	22300	22301				
FERA LIMS No.	S13-064043	S13-064044	S13-064045	S13-064046				
Description	74% Raspberry Dark Chocolate with Raspberry	Panama Tierra Oscura	Panama Tierra Oscura	Corazon Del Ecuador Cocoa Nibs/Coffee				
µg/kg fat weight	U%	U%	U%	U%	U%			
acenaphthylene	<1.29	201	<1.18	201	<1.15	201	<1.29	201
acenaphthene	<1.61	201	3.33	91	5.63	55	4.59	74
fluorene	2.21	172	8.55	46	9.50	41	6.19	65
phenanthrene	29.23	27	45.91	23	44.09	23	37.32	25
anthracene	1.39	27	1.65	25	2.14	23	2.27	24
fluoranthene	8.91	34	5.40	46	5.41	45	7.44	39
benzo[c]fluorene	0.68	22	0.37	24	0.28	25	0.34	24
pyrene	8.68i	33	4.96	46	4.72	47	7.88i	35
benzo[ghi]fluoranthene	0.94	16	0.40	19	0.37	19	0.59	17
<b>benz (a) anthracene</b>	<b>0.56</b>	<b>17</b>	<b>0.33</b>	<b>20</b>	<b>0.37</b>	<b>19</b>	<b>0.75</b>	<b>17</b>
benzo[b]naphtho[2,1-d]thiophene	0.10	62	0.13	35	<0.17	201	<0.34	201
cyclopenta[c,d]pyrene	0.25	18	0.07	33	0.09	27	0.19	19
<b>chrysene</b>	<b>0.70</b>	<b>40</b>	<b>0.45</b>	<b>56</b>	<b>0.52</b>	<b>45</b>	<b>1.12</b>	<b>28</b>
5-methylchrysene	<0.02	201	<0.01	201	<0.01	201	<0.01	201
<b>benzo[b]fluoranthene</b>	<b>0.63</b>	<b>45</b>	<b>0.38</b>	<b>65</b>	<b>0.44</b>	<b>53</b>	<b>0.71</b>	<b>40</b>
benzo[j]fluoranthene	0.46	17	0.24	19	0.23	19	0.21	19
benzo[k]fluoranthene	0.18	28	0.10	43	0.15	32	0.26	23
benzo[e]pyrene	0.39	23	0.24	30	0.27	28	0.72	19
<b>benzo[a]pyrene</b>	<b>0.41</b>	<b>85</b>	<b>0.21</b>	<b>153</b>	<b>0.27</b>	<b>112</b>	<b>0.42</b>	<b>83</b>
indeno[1,2,3-cd]pyrene	<0.31	201	<0.17	201	<0.2	201	<0.3	201
dibenz[ah]anthracene	<0.12	201	<0.11	201	<0.11	201	<0.17	201
benzo-[g,h,i]perylene	0.28	21	0.13	35	<0.19	201	0.30	21
anthanthrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,l]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,e]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,i]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,h]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
coronene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
<b>PAH 4 Sum Lower µg/kg</b>	<b>2.30</b>	<b>1.37</b>	<b>1.60</b>	<b>3.00</b>				
<b>PAH 4 Sum Upper µg/kg</b>	<b>2.30</b>	<b>32</b>	<b>1.37</b>	<b>66</b>	<b>1.60</b>	<b>48</b>	<b>3.00</b>	<b>24</b>

OEC Sample No.	22302	22303	22304	22305	
FERA LIMS No.	S13-064047	S13-064048	S13-064049	S13-064050	
Description	Corazon Del Ecuador Cocoa Nibs/Coffee	Panama Tierra Oscura Roasted Cocoa Beans	Panama Tierra Oscura Roasted Cocoa Beans	100% Cocoa	
µg/kg fat weight	U%	U%	U%	U%	U%
acenaphthylene	<1.31	201	<4.82	201	<6.05
acenaphthene	4.70	73	13.83	90	17.32
fluorene	6.09	67	16.19	90	18.10
phenanthrene	40.11	24	86.35	30	117.46
anthracene	2.27	24	5.52	27	6.77
fluoranthene	7.82	38	13.24	71	17.49
benzo[c]fluorene	0.40	23	0.66	30	0.88
pyrene	7.85i	36	9.61i	89	12.50
benzo[ghi]fluoranthene	0.61	19	0.62	33	0.86
<b>benz (a) anthracene</b>	<b>0.65</b>	<b>18</b>	<b>0.62</b>	<b>33</b>	<b>1.05</b>
benzo[b]naphtho[2,1-d]thiophene	<0.19	201	<0.55	201	<1.24
cyclopenta[c,d]pyrene	0.19	19	0.13	22	<0.14
<b>chrysene</b>	<b>0.87</b>	<b>34</b>	<b>0.83</b>	<b>117</b>	<b>1.73</b>
5-methylchrysene	<0.02	201	<0.02	201	<0.05
<b>benzo[b]fluoranthene</b>	<b>0.50</b>	<b>55</b>	<b>1.31</b>	<b>75</b>	<b>1.90</b>
benzo[jj]fluoranthene	0.25	19	0.64	23	0.95
benzo[k]fluoranthene	0.23	24	0.30	50	0.62
benzo[e]pyrene	0.40	23	0.57	45	1.02
<b>benzo[a]pyrene</b>	<b>0.37</b>	<b>99</b>	<b>0.70</b>	<b>184</b>	<b>1.24</b>
indeno[1,2,3-cd]pyrene	<0.25	201	<0.62	201	<1.12
dibenz[ah]anthracene	<0.12	201	<0.43	201	<0.71
benzo-[g,h,i]perylene	<0.26	201	<0.55	201	1.02
anthanthrene	<0.1	201	<0.1	201	<0.1
dibenzo[a,l]pyrene	<0.1	201	<0.1	201	<0.14
dibenzo[a,e]pyrene	<0.1	201	<0.1	201	<0.14
dibenzo[a,i]pyrene	<0.1	201	<0.1	201	0.12
dibenzo[a,h]pyrene	<0.1	201	<0.1	201	<0.1
coronene	<0.1	201	<0.1	201	<0.1
<b>PAH 4 Sum Lower µg/kg</b>	<b>2.39</b>	<b>3.46</b>	<b>5.92</b>	<b>1.21</b>	
<b>PAH 4 Sum Upper µg/kg</b>	<b>2.39</b>	<b>33</b>	<b>3.46</b>	<b>60</b>	<b>5.92</b>
				<b>33</b>	<b>1.21</b>
					<b>63</b>

OEC Sample No.	22306	22307	22308	22309	
FERA LIMS No.	S13-064051	S13-064052	S13-064053	S13-064054	
Description	100% Cocoa	Dark Chocolate With Violet	Dark Chocolate With Violet	Orange & Geranium Dark Chocolate	
<b>µg/kg fat weight</b>		U%	U%	U%	U%
acenaphthylene	<0.98	201	4.25	72	4.36
acenaphthene	4.72	56	12.89	35	10.86
fluorene	3.65	82	5.06	88	4.76
phenanthrene	31.85	24	49.93	24	50.54
anthracene	1.44	24	1.84	26	1.84
fluoranthene	6.71	35	9.72	35	9.66
benzo[c]fluorene	0.44	22	0.76	22	0.70
pyrene	6.30i	34	9.87i	33	9.19i
benzo[ghi]fluoranthene	0.53	18	0.91	17	0.84
<b>benz (a) anthracene</b>	<b>0.48</b>	<b>18</b>	<b>0.69</b>	<b>18</b>	<b>0.62</b>
benzo[b]naphtho[2,1-d]thiophene	<0.19	201	<0.3	201	<0.27
cyclopenta[c,d]pyrene	0.15	21	0.24	18	0.23
<b>chrysene</b>	<b>0.60</b>	<b>37</b>	<b>0.92</b>	<b>36</b>	<b>0.84</b>
5-methylchrysene	<0.02	201	<0.02	201	<0.02
<b>benzo[b]fluoranthene</b>	<b>0.49</b>	<b>44</b>	<b>0.78</b>	<b>42</b>	<b>0.78</b>
benzo[jj]fluoranthene	0.24	19	0.41	20	0.39
benzo[k]fluoranthene	0.17	21	0.23	24	0.25
benzo[e]pyrene	0.32	21	0.56	22	0.51
<b>benzo[a]pyrene</b>	<b>0.33</b>	<b>81</b>	<b>0.51</b>	<b>80</b>	<b>0.50</b>
indeno[1,2,3-cd]pyrene	<0.27	201	<0.42	201	<0.4
dibenz[ah]anthracene	<0.12	201	<0.2	201	<0.17
benzo-[g,h,i]perylene	0.26	22	0.43	21	0.39
anthanthrene	<0.1	201	<0.1	201	<0.1
dibenzo[a,l]pyrene	<0.1	201	<0.1	201	<0.1
dibenzo[a,e]pyrene	<0.1	201	<0.1	201	<0.1
dibenzo[a,i]pyrene	<0.1	201	<0.1	201	<0.1
dibenzo[a,h]pyrene	<0.1	201	<0.1	201	<0.1
coronene	<0.1	201	<0.1	201	<0.1
<b>PAH 4 Sum Lower µg/kg</b>	<b>1.90</b>		<b>2.90</b>		<b>2.74</b>
<b>PAH 4 Sum Upper µg/kg</b>	<b>1.90</b>	<b>34</b>	<b>2.90</b>	<b>27</b>	<b>2.74</b>
				<b>27</b>	<b>2.60</b>
					<b>32</b>

OEC Sample No.	22310	22311	22312	22313				
FERA LIMS No.	S13-064055	S13-064056	S13-064057	S13-064058				
Description	Orange & Geranium Dark Chocolate	Chilli Pepper Dark Chocolate Artisan Bar	Chilli Pepper Dark Chocolate Artisan Bar	Dark Chocolate Floral Bar Jasmine				
µg/kg fat weight	U%	U%	U%	U%				
acenaphthylene	2.51	120	4.70	70	2.95	105	4.80	67
acenaphthene	6.18	64	6.28	66	6.82	60	7.63	54
fluorene	4.81	93	6.80	70	5.66	82	6.28	74
phenanthrene	51.46	24	64.09	23	53.64	24	58.68	23
anthracene	2.16	25	2.54	24	2.23	25	2.83	24
fluoranthene	10.70	33	12.50i	31	10.68	34	12.94	30
benzo[c]fluorene	0.87	22	0.97	21	0.75	22	1.08	21
pyrene	11.36i	31	12.25i	30	10.33i	33	12.31i	30
benzo[ghi]fluoranthene	0.97	17	1.10	17	0.98	17	1.33	16
<b>benz (a) anthracene</b>	<b>0.56</b>	<b>19</b>	<b>0.59</b>	<b>19</b>	<b>0.61</b>	<b>19</b>	<b>1.07</b>	<b>17</b>
benzo[b]naphtho[2,1-d]thiophene	<0.2	201	<0.24	201	<0.24	201	<0.33	201
cyclopenta[c,d]pyrene	0.20	19	0.19	19	0.20	19	0.33	17
<b>chrysene</b>	<b>0.72</b>	<b>45</b>	<b>0.80</b>	<b>41</b>	<b>0.77</b>	<b>42</b>	<b>1.35</b>	<b>27</b>
5-methylchrysene	<0.01	201	<0.01	201	<0.01	201	<0.02	201
<b>benzo[b]fluoranthene</b>	<b>0.76</b>	<b>43</b>	<b>0.83</b>	<b>40</b>	<b>0.87</b>	<b>38</b>	<b>1.13</b>	<b>31</b>
benzo[jj]fluoranthene	0.43	19	0.48	19	0.44	19	0.66	18
benzo[k]fluoranthene	0.27	22	0.32	21	0.27	22	0.42	19
benzo[e]pyrene	0.50	23	0.63	21	0.61	21	0.72	20
<b>benzo[a]pyrene</b>	<b>0.50</b>	<b>82</b>	<b>0.49</b>	<b>87</b>	<b>0.51</b>	<b>80</b>	<b>0.74</b>	<b>57</b>
indeno[1,2,3-cd]pyrene	<0.4	201	<0.42	201	<0.41	201	<0.55	201
dibenz[ah]anthracene	<0.15	201	<0.16	201	<0.17	201	<0.19	201
benzo-[g,h,i]perylene	0.38	22	0.43	21	0.41	22	0.54	19
anthanthrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,l]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,e]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,i]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,h]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
coronene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
<b>PAH 4 Sum Lower µg/kg</b>	<b>2.54</b>	<b>2.71</b>	<b>2.76</b>	<b>4.29</b>				
<b>PAH 4 Sum Upper µg/kg</b>	<b>2.54</b>	<b>31</b>	<b>2.71</b>	<b>30</b>	<b>2.76</b>	<b>28</b>	<b>4.29</b>	<b>16</b>

OEC Sample No.	22314	22315	22316	22317				
FERA LIMS No.	S13-064059	S13-064060	S13-064061	S13-064062				
Description	Dark Chocolate Floral Bar Jasmine	Dark Chocolate With Nibs	Dark Chocolate With Nibs	Darker Chocolate With Brazil Nuts & Apricots				
<b>µg/kg fat weight</b>		U%	U%	U%				
acenaphthylene	3.73	82	<1.54	201	<1.56	201	<2.71	201
acenaphthene	5.27	73	4.95	81	5.43	75	10.28	69
fluorene	4.66	95	6.87	69	6.79	71	12.83	66
phenanthrene	58.26	23	48.07	24	50.38	24	55.28	28
anthracene	2.63	24	3.21	23	3.30	23	4.68	24
fluoranthene	12.89i	30	12.03	32	12.83	31	26.27	29
benzo[c]fluorene	0.88	22	0.78	22	0.72	22	0.78	23
pyrene	12.20i	30	9.53i	35	9.80i	35	14.69	38
benzo[ghi]fluoranthene	1.25	17	0.95	17	1.08	17	2.14	16
<b>benz (a) anthracene</b>	<b>1.05</b>	<b>17</b>	<b>0.83</b>	<b>17</b>	<b>0.93</b>	<b>17</b>	<b>1.01</b>	<b>19</b>
benzo[b]naphtho[2,1-d]thiophene	<0.37	201	<0.2	201	<0.28	201	<0.58	201
cyclopenta[c,d]pyrene	0.41	17	0.25	18	0.32	17	0.19	19
<b>chrysene</b>	<b>1.41</b>	<b>27</b>	<b>1.09</b>	<b>32</b>	<b>1.38</b>	<b>28</b>	<b>1.84</b>	<b>33</b>
5-methylchrysene	<0.03	201	<0.02	201	<0.02	201	<0.01	201
<b>benzo[b]fluoranthene</b>	<b>1.15</b>	<b>31</b>	<b>0.96</b>	<b>36</b>	<b>1.20</b>	<b>32</b>	<b>1.15</b>	<b>50</b>
benzo[jj]fluoranthene	0.60	18	0.46	19	0.75	18	0.84	18
benzo[k]fluoranthene	0.45	19	0.36	20	0.44	19	0.54	22
benzo[e]pyrene	0.81	20	0.53	23	0.74	20	0.95	22
<b>benzo[a]pyrene</b>	<b>0.73</b>	<b>57</b>	<b>0.61</b>	<b>71</b>	<b>0.82</b>	<b>54</b>	<b>0.89</b>	<b>83</b>
indeno[1,2,3-cd]pyrene	<0.56	201	<0.47	201	<0.58	201	<0.59	201
dibenz[ah]anthracene	<0.2	201	<0.18	201	<0.2	201	<0.28	201
benzo-[g,h,i]perylene	0.57	19	0.46	20	0.58	19	0.55	24
anthanthrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,l]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,e]pyrene	0.10	201	<0.1	201	<0.1	201	<0.11	201
dibenzo[a,i]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,h]pyrene	0.11	183	<0.1	201	<0.1	201	<0.1	201
coronene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
<b>PAH 4 Sum Lower µg/kg</b>	<b>4.34</b>		<b>3.49</b>		<b>4.33</b>		<b>4.89</b>	
<b>PAH 4 Sum Upper µg/kg</b>	<b>4.34</b>	<b>16</b>	<b>3.49</b>	<b>21</b>	<b>4.33</b>	<b>16</b>	<b>4.89</b>	<b>22</b>

OEC Sample No.	22318	22319	22320	22321				
FERA LIMS No.	S13-064063	S13-064064	S13-064065	S13-064066				
Description	Darker Chocolate With Brazil Nuts & Apricots	Chocolate Mint Thins	Chocolate Mint Thins	85% Cocoa Ivory Coast & Ecuador Plain Chocolate				
µg/kg fat weight	U%	U%	U%	U%				
acenaphthylene	<2.45	201	<2.73	201	<2.76	201	3.97	64
acenaphthene	7.84	81	5.80	120	3.64	191	2.40	126
fluorene	13.77	56	7.29	112	4.69	174	7.34	52
phenanthrene	51.68	28	55.47	28	58.85	28	52.41	23
anthracene	4.21	24	3.92	25	3.19	27	4.23	22
fluoranthene	18.68i	32	15.45i	39	18.07	35	13.84i	26
benzo[c]fluorene	0.61	23	0.66	24	0.98	23	0.93	21
pyrene	13.04	39	12.49	43	13.70	41	14.18i	26
benzo[ghi]fluoranthene	1.45	17	1.14	18	1.51	17	1.92	16
<b>benz (a) anthracene</b>	<b>1.26</b>	<b>18</b>	<b>1.44</b>	<b>17</b>	<b>1.15</b>	<b>18</b>	<b>1.47</b>	<b>16</b>
benzo[b]naphtho[2,1-d]thiophene	<0.52	201	<0.85	201	<0.37	201	<0.24	201
cyclopenta[c,d]pyrene	0.19	19	0.30	17	0.29	17	0.69	16
<b>chrysene</b>	<b>1.95</b>	<b>29</b>	<b>2.85</b>	<b>25</b>	<b>1.78</b>	<b>34</b>	<b>1.91</b>	<b>20</b>
5-methylchrysene	<0.02	201	<0.05	201	0.01	201	<0.01	201
<b>benzo[b]fluoranthene</b>	<b>1.27</b>	<b>41</b>	<b>2.60</b>	<b>27</b>	<b>1.72</b>	<b>36</b>	<b>1.05</b>	<b>28</b>
benzo[jj]fluoranthene	0.74	19	0.59	20	0.89	18	0.80	17
benzo[k]fluoranthene	0.57	20	0.47	24	0.55	22	0.44	19
benzo[e]pyrene	0.94	21	2.22	18	0.86	23	1.09	18
<b>benzo[a]pyrene</b>	<b>0.92</b>	<b>74</b>	<b>1.04</b>	<b>73</b>	<b>0.92</b>	<b>82</b>	<b>0.98</b>	<b>37</b>
indeno[1,2,3-cd]pyrene	<0.64	201	<0.81	201	<0.69	201	0.68	33
dibenz[ah]anthracene	<0.3	201	<0.52	201	<0.3	201	<0.16	201
benzo-[g,h,i]perylene	0.58	23	1.13	18	<0.73	201	0.84	17
anthanthrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,l]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,e]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,i]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,h]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
coronene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
<b>PAH 4 Sum Lower µg/kg</b>	<b>5.40</b>	<b>7.93</b>	<b>5.57</b>	<b>5.41</b>				
<b>PAH 4 Sum Upper µg/kg</b>	<b>5.40</b>	<b>18</b>	<b>7.93</b>	<b>12</b>	<b>5.57</b>	<b>19</b>	<b>5.41</b>	<b>11</b>

OEC Sample No.	22322	22323	22324	22325	
FERA LIMS No.	S13-064067	S13-064068	S13-064069	S13-064070	
Description	85% Cocoa Ivory Coast & Ecuador Plain Chocolate	Finest Equadorian 74% Dark Chocolate	Finest Equadorian 74% Dark Chocolate	Cocoa Peruvian Gold	
µg/kg fat weight	U%	U%	U%	U%	
acenaphthylene	3.18	78	<1.28	201	<1.22
acenaphthene	2.78	109	3.32	99	2.13
fluorene	5.99	62	3.38	113	2.52
phenanthrene	51.88	23	35.03	25	31.15
anthracene	3.53	22	1.91	24	1.76
fluoranthene	13.12i	27	8.54i	35	8.13i
benzo[c]fluorene	1.05	21	0.55	22	0.45
pyrene	13.11i	26	7.63	36	7.51i
benzo[ghi]fluoranthene	1.74	16	0.90	16	0.93
<b>benz (a) anthracene</b>	<b>1.30</b>	<b>16</b>	<b>0.55</b>	<b>17</b>	<b>0.56</b>
benzo[b]naphtho[2,1-d]thiophene	<0.26	201	<0.22	201	<0.26
cyclopenta[c,d]pyrene	0.51	16	0.16	20	0.10
<b>chrysene</b>	<b>1.74</b>	<b>21</b>	<b>0.76</b>	<b>38</b>	<b>0.80</b>
5-methylchrysene	<0.04	201	<0.01	201	<0.01
<b>benzo[b]fluoranthene</b>	<b>1.07</b>	<b>28</b>	<b>0.67</b>	<b>42</b>	<b>0.69</b>
benzo[jj]fluoranthene	0.73	17	0.40	18	0.40
benzo[k]fluoranthene	0.39	20	0.28	22	0.27
benzo[e]pyrene	1.11	18	0.48	21	0.56
<b>benzo[a]pyrene</b>	<b>0.93</b>	<b>38</b>	<b>0.53</b>	<b>66</b>	<b>0.54</b>
indeno[1,2,3-cd]pyrene	0.67	34	0.37	62	<0.42
dibenz[ah]anthracene	<0.15	201	<0.13	201	<0.13
benzo-[g,h,i]perylene	0.84	17	0.39	19	0.41
anthanthrene	<0.1	201	<0.1	201	<0.1
dibenzo[a,l]pyrene	<0.1	201	<0.1	201	<0.1
dibenzo[a,e]pyrene	<0.1	201	<0.1	201	<0.1
dibenzo[a,i]pyrene	<0.1	201	<0.1	201	<0.1
dibenzo[a,h]pyrene	<0.1	201	<0.1	201	<0.1
coronene	<0.1	201	<0.1	201	<0.1
<b>PAH 4 Sum Lower µg/kg</b>	<b>5.04</b>	<b>2.51</b>	<b>2.59</b>	<b>1.49</b>	
<b>PAH 4 Sum Upper µg/kg</b>	<b>5.04</b>	<b>11</b>	<b>2.51</b>	<b>28</b>	<b>2.59</b>
				<b>45</b>	<b>1.49</b>
					<b>34</b>

OEC Sample No.	22326	22327	22328	22329				
FERA LIMS No.	S13-064071	S13-064072	S13-064073	S13-064074				
Description	Cocoa Peruvian Gold	Cocoa Ginger & Lime	Cocoa Ginger & Lime	70% Dark Chocolate				
<b>µg/kg fat weight</b>		U%	U%	U%				
acenaphthylene	<1.48	201	<1.68	201	<1.53	201	<1.24	201
acenaphthene	2.77	135	3.76	114	3.05	127	2.31	136
fluorene	2.60	168	3.57	139	3.61	126	2.91	127
phenanthrene	29.51	28	47.73	25	40.50	25	37.82	24
anthracene	1.42	29	2.05	26	1.83	27	1.33	28
fluoranthene	13.09	30	13.74	31	11.67	32	14.18i	27
benzo[c]fluorene	0.57	22	0.71	22	0.58	22	0.71	22
pyrene	19.22i	25	13.33i	30	10.43i	33	20.36i	24
benzo[ghi]fluoranthene	1.95	16	1.57	16	1.22	17	2.36	16
<b>benz (a) anthracene</b>	<b>0.31</b>	<b>25</b>	<b>0.68</b>	<b>18</b>	<b>0.64</b>	<b>18</b>	<b>1.11</b>	<b>16</b>
benzo[b]naphtho[2,1-d]thiophene	<0.28	201	<0.26	201	<0.32	201	<0.26	201
cyclopenta[c,d]pyrene	0.46	16	0.26	18	0.20	19	0.74	16
<b>chrysene</b>	<b>0.51</b>	<b>61</b>	<b>0.92</b>	<b>40</b>	<b>0.95</b>	<b>35</b>	<b>1.36</b>	<b>24</b>
5-methylchrysene	<0.01	201	<0.01	201	<0.01	201	<0.01	201
<b>benzo[b]fluoranthene</b>	<b>0.56</b>	<b>56</b>	<b>0.93</b>	<b>40</b>	<b>0.91</b>	<b>37</b>	<b>0.82</b>	<b>34</b>
benzo[jj]fluoranthene	0.34	21	0.46	19	0.41	20	0.46	17
benzo[k]fluoranthene	0.17	29	0.28	22	0.22	25	0.35	20
benzo[e]pyrene	0.44	25	0.68	21	0.76	20	0.53	20
<b>benzo[a]pyrene</b>	<b>0.32</b>	<b>126</b>	<b>0.51</b>	<b>88</b>	<b>0.42</b>	<b>97</b>	<b>0.60</b>	<b>59</b>
indeno[1,2,3-cd]pyrene	<0.26	201	<0.45	201	<0.4	201	<0.38	201
dibenz[ah]anthracene	<0.13	201	<0.15	201	<0.14	201	<0.13	201
benzo-[g,h,i]perylene	0.28	27	0.43	21	0.40	22	0.33	20
anthanthrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,l]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,e]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,i]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,h]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
coronene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
<b>PAH 4 Sum Lower µg/kg</b>	<b>1.70</b>		<b>3.04</b>		<b>2.92</b>		<b>3.89</b>	
<b>PAH 4 Sum Upper µg/kg</b>	<b>1.70</b>	<b>56</b>	<b>3.04</b>	<b>28</b>	<b>2.92</b>	<b>28</b>	<b>3.89</b>	<b>16</b>

OEC Sample No.	22330	22331	22332	22333				
FERA LIMS No.	S13-064075	S13-064076	S13-064077	S13-064078				
Description	70% Dark Chocolate	Smooth Dark Chocolate	Truly Irresistible Ghanaian Dark Chocolate	Truly Irresistible Ghanaian Dark Chocolate				
<b>µg/kg fat weight</b>		U%	U%	U%				
acenaphthylene	<1.29	201	<1.33	201	<1.21	201	1.48	154
acenaphthene	3.04	108	2.97	114	2.82	110	3.58	82
fluorene	5.86	68	5.65	72	4.41	83	5.39	65
phenanthrene	40.38	24	50.08	23	35.72	25	46.38	23
anthracene	2.43	23	3.39	22	2.48	23	3.10	22
fluoranthene	17.08i	25	14.11i	27	10.48	30	12.73i	27
benzo[c]fluorene	0.82	22	1.18	21	0.60	22	0.89	21
pyrene	26.33i	23	11.42i	29	8.74	32	10.51i	28
benzo[ghi]fluoranthene	1.89	16	0.79	18	0.68	17	0.78	17
<b>benz (a) anthracene</b>	<b>1.13</b>	<b>16</b>	<b>0.54</b>	<b>19</b>	<b>0.52</b>	<b>18</b>	<b>0.59</b>	<b>17</b>
benzo[b]naphtho[2,1-d]thiophene	<0.21	201	<0.19	201	<0.15	201	<0.2	201
cyclopenta[c,d]pyrene	1.07	16	0.31	17	0.29	17	0.21	18
<b>chrysene</b>	<b>1.51</b>	<b>23</b>	<b>0.91</b>	<b>33</b>	<b>0.81</b>	<b>34</b>	<b>0.84</b>	<b>31</b>
5-methylchrysene	<0.02	201	<0.01	201	0.01	201	<0.01	201
<b>benzo[b]fluoranthene</b>	<b>0.78</b>	<b>37</b>	<b>0.73</b>	<b>39</b>	<b>0.62</b>	<b>42</b>	<b>0.71</b>	<b>35</b>
benzo[jj]fluoranthene	0.50	17	0.52	17	0.39	18	0.50	17
benzo[k]fluoranthene	0.33	21	0.21	25	0.23	24	0.20	26
benzo[e]pyrene	0.58	20	0.40	23	0.42	22	0.40	23
<b>benzo[a]pyrene</b>	<b>0.61</b>	<b>58</b>	<b>0.42</b>	<b>87</b>	<b>0.45</b>	<b>73</b>	<b>0.40</b>	<b>77</b>
indeno[1,2,3-cd]pyrene	<0.36	201	<0.3	201	0.32	64	<0.28	201
dibenz[ah]anthracene	<0.23	201	<0.2	201	<0.2	201	<0.19	201
benzo-[g,h,i]perylene	0.32	20	<0.31	201	0.37	19	0.27	22
anthanthrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,l]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,e]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,i]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,h]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
coronene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
<b>PAH 4 Sum Lower µg/kg</b>	<b>4.03</b>		<b>2.60</b>		<b>2.40</b>		<b>2.54</b>	
<b>PAH 4 Sum Upper µg/kg</b>	<b>4.03</b>	<b>16</b>	<b>2.60</b>	<b>29</b>	<b>2.40</b>	<b>28</b>	<b>2.54</b>	<b>26</b>

OEC Sample No.	22334	22335	22336	22337				
FERA LIMS No.	S13-064079	S13-064080	S13-064081	S13-064082				
Description	Signature 72% Dark Chocolate	Signature 72% Dark Chocolate	75% From Madagascar	75% From Madagascar				
<b>µg/kg fat weight</b>	U%	U%	U%	U%				
acenaphthylene	<1.22	201	<1.23	201	1.39	175	<1.19	201
acenaphthene	2.75	113	3.58	89	4.69	68	4.28	73
fluorene	4.56	81	5.10	74	6.44	59	5.47	67
phenanthrene	41.28	24	43.30	24	44.47	23	43.64	23
anthracene	2.71	23	2.85	23	3.06	22	2.90	22
fluoranthene	11.20	29	11.52	29	11.42	29	12.03	28
benzo[c]fluorene	0.90	21	0.83	22	0.77	22	0.69	22
pyrene	10.60i	29	10.90i	29	10.98i	28	11.24i	28
benzo[ghi]fluoranthene	0.76	17	0.79	17	0.80	17	0.80	17
<b>benz (a) anthracene</b>	<b>0.69</b>	<b>17</b>	<b>0.71</b>	<b>17</b>	<b>0.70</b>	<b>17</b>	<b>0.70</b>	<b>17</b>
benzo[b]naphtho[2,1-d]thiophene	<0.15	201	<0.17	201	<0.16	201	<0.18	201
cyclopenta[c,d]pyrene	0.31	17	0.31	17	0.31	17	0.22	18
<b>chrysene</b>	<b>0.92</b>	<b>31</b>	<b>0.97</b>	<b>29</b>	<b>0.86</b>	<b>32</b>	<b>0.91</b>	<b>31</b>
5-methylchrysene	<0.01	201	<0.01	201	<0.01	201	<0.01	201
<b>benzo[b]fluoranthene</b>	<b>0.80</b>	<b>34</b>	<b>0.83</b>	<b>33</b>	<b>0.75</b>	<b>36</b>	<b>0.75</b>	<b>36</b>
benzo[jj]fluoranthene	0.55	17	0.51	17	0.50	17	0.40	18
benzo[k]fluoranthene	0.32	21	0.32	21	0.34	21	0.32	21
benzo[e]pyrene	0.48	21	0.50	21	0.48	21	0.50	21
<b>benzo[a]pyrene</b>	<b>0.56</b>	<b>60</b>	<b>0.56</b>	<b>63</b>	<b>0.56</b>	<b>60</b>	<b>0.55</b>	<b>61</b>
indeno[1,2,3-cd]pyrene	0.39	54	0.41	51	0.38	55	0.38	55
dibenz[ah]anthracene	<0.23	201	<0.24	201	<0.23	201	<0.24	201
benzo-[g,h,i]perylene	0.42	18	0.43	18	0.40	19	0.41	19
anthanthrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,l]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,e]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,i]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,h]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
coronene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
<b>PAH 4 Sum Lower µg/kg</b>	<b>2.97</b>	<b>3.07</b>	<b>2.87</b>	<b>2.91</b>				
<b>PAH 4 Sum Upper µg/kg</b>	<b>2.97</b>	<b>21</b>	<b>3.07</b>	<b>21</b>	<b>2.87</b>	<b>22</b>	<b>2.91</b>	<b>22</b>

OEC Sample No.	22338	22339	22340	22341				
FERA LIMS No.	S13-064083	S13-064084	S13-064085	S13-064086				
Description	Dark Chocolate From Brazil	Dark Chocolate From Brazil	Trinidad Vintage 2013	Trinidad Vintage 2013				
<b>µg/kg fat weight</b>	U%	U%	U%	U%				
acenaphthylene	<0.9	201	0.57	70	2.19	30	2.92	26
acenaphthene	1.92	127	2.77	56	1.49	121	1.73	103
fluorene	<1.51	201	3.03	88	3.50	94	3.30	97
phenanthrene	25.57	27	21.86	32	28.84	31	23.52	34
anthracene	0.77	44	0.75	101	1.84	54	1.46	65
fluoranthene	7.85	33	7.65	38	12.97	31	10.42	35
benzo[c]fluorene	0.49	21	0.33	24	0.54	22	0.51	22
pyrene	7.00i	22	7.18i	36	13.71i	28	10.76i	32
benzo[ghi]fluoranthene	0.97	16	0.74	17	1.65	16	1.23	17
<b>benz (a) anthracene</b>	<b>0.36</b>	<b>19</b>	<b>0.40</b>	<b>57</b>	<b>1.96</b>	<b>21</b>	<b>1.57</b>	<b>24</b>
benzo[b]naphtho[2,1-d]thiophene	<0.15	201	<0.18	201	<0.35	201	<0.26	201
cyclopenta[c,d]pyrene	0.16	20	0.18	19	0.35	17	0.36	17
<b>chrysene</b>	<b>0.60</b>	<b>19</b>	<b>0.63</b>	<b>47</b>	<b>2.46</b>	<b>21</b>	<b>1.90</b>	<b>24</b>
5-methylchrysene	<0.01	201	<0.01	201	<0.01	201	<0.02	201
<b>benzo[b]fluoranthene</b>	<b>0.43</b>	<b>49</b>	<b>0.58</b>	<b>101</b>	<b>1.38</b>	<b>55</b>	<b>1.07</b>	<b>68</b>
benzo[jj]fluoranthene	0.27	18	0.43	29	0.86	22	0.68	24
benzo[k]fluoranthene	0.13	49	<0.29	201	0.51	146	0.43	168
benzo[e]pyrene	0.42	19	0.42	51	1.13	27	0.82	34
<b>benzo[a]pyrene</b>	<b>0.27</b>	<b>120</b>	<b>0.30</b>	<b>128</b>	<b>1.08</b>	<b>48</b>	<b>0.90</b>	<b>54</b>
indeno[1,2,3-cd]pyrene	<0.25	201	<0.31	201	0.80	50	0.62	63
dibenz[ah]anthracene	<0.09	201	<0.18	201	<0.24	201	<0.22	201
benzo-[g,h,i]perylene	0.27	22	0.26	56	0.72	30	0.55	33
anthanthrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,l]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,e]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,i]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,h]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
coronene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
<b>PAH 4 Sum Lower µg/kg</b>	<b>1.66</b>	<b>1.91</b>	<b>6.88</b>	<b>5.44</b>				
<b>PAH 4 Sum Upper µg/kg</b>	<b>1.66</b>	<b>44</b>	<b>1.91</b>	<b>61</b>	<b>6.88</b>	<b>13</b>	<b>5.44</b>	<b>18</b>

OEC Sample No.	22342	22343	22344	22345
FERA LIMS No.	S13-064087	S13-064088	S13-064089	S13-064090
Description	66% Cocoa	66% Cocoa	64% Cocoa	64% Cocoa
<b>µg/kg fat weight</b>		U%	U%	U%
acenaphthylene	1.87	32	2.00	31
acenaphthene	2.38	77	2.37	77
fluorene	3.36	96	3.88	84
phenanthrene	29.43	30	29.42	30
anthracene	2.49	42	2.51	42
fluoranthene	11.93	32	12.31	32
benzo[c]fluorene	0.57	22	0.72	22
pyrene	11.16i	31	11.06i	31
benzo[ghi]fluoranthene	1.21	17	1.17	17
<b>benz (a) anthracene</b>	<b>1.21</b>	<b>28</b>	<b>1.29</b>	<b>27</b>
benzo[b]naphtho[2,1-d]thiophene	<0.16	201	<0.21	201
cyclopenta[c,d]pyrene	0.35	17	0.46	16
<b>chrysene</b>	<b>1.37</b>	<b>29</b>	<b>1.50</b>	<b>28</b>
5-methylchrysene	<0.01	201	<0.01	201
<b>benzo[b]fluoranthene</b>	<b>0.86</b>	<b>83</b>	<b>0.88</b>	<b>81</b>
benzo[jj]fluoranthene	0.59	26	0.63	25
benzo[k]fluoranthene	<0.36	201	<0.36	201
benzo[e]pyrene	0.49	52	0.55	47
<b>benzo[a]pyrene</b>	<b>0.59</b>	<b>80</b>	<b>0.63</b>	<b>75</b>
indeno[1,2,3-cd]pyrene	<0.45	201	<0.47	201
dibenz[ah]anthracene	<0.22	201	<0.22	201
benzo-[g,h,i]perylene	0.34	50	0.35	48
anthanthrene	<0.1	201	<0.1	201
dibenzo[a,l]pyrene	<0.1	201	<0.1	201
dibenzo[a,e]pyrene	<0.1	201	<0.1	201
dibenzo[a,i]pyrene	<0.1	201	<0.1	201
dibenzo[a,h]pyrene	<0.1	201	<0.1	201
coronene	<0.1	201	<0.1	201
<b>PAH 4 Sum Lower µg/kg</b>	<b>4.03</b>		<b>4.30</b>	
<b>PAH 4 Sum Upper µg/kg</b>	<b>4.03</b>	<b>27</b>	<b>4.30</b>	<b>25</b>
			<b>3.09</b>	<b>3.09</b>
			<b>41</b>	<b>3.30</b>
				<b>36</b>

OEC Sample No.	22346	22347	22348	22349				
FERA LIMS No.	S13-064091	S13-064092	S13-064093	S13-064094				
Description	Ginger Dark Chocolate	Ginger Dark Chocolate	Maya Gold Dark Chocolate	Maya Gold Dark Chocolate				
<b>µg/kg fat weight</b>		U%	U%	U%				
acenaphthylene	0.86i	55	0.65i	71	0.71	52	0.47i	75
acenaphthene	<2.31	201	<2.28	201	<1.76	201	<1.72	201
fluorene	<2.49	201	<2.47	201	<1.9	201	<1.86	201
phenanthrene	28.10	39	26.67	41	21.75	39	20.21	40
anthracene	1.13	57	1.12	58	1.14	45	0.95	53
fluoranthene	7.72	64	7.75	63	6.56	58	6.01	62
benzo[c]fluorene	0.49	24	0.61	23	0.44	25	0.43	23
pyrene	6.70	75	6.40	77	5.70	68	5.30	71
benzo[ghi]fluoranthene	0.73	60	0.61	71	0.62	54	0.63	53
<b>benz (a) anthracene</b>	<b>0.47</b>	<b>70</b>	<b>0.49</b>	<b>67</b>	<b>0.58</b>	<b>44</b>	<b>0.47</b>	<b>53</b>
benzo[b]naphtho[2,1-d]thiophene	<0.3	201	<0.21	201	<0.18	201	<0.16	201
cyclopenta[c,d]pyrene	<0.08	201	0.17	20	0.16	20	0.13	22
<b>chrysene</b>	<b>0.79</b>	<b>58</b>	<b>0.63</b>	<b>72</b>	<b>0.64</b>	<b>55</b>	<b>0.53</b>	<b>62</b>
5-methylchrysene	<0.04	201	<0.02	201	<0.02	201	0.01	201
<b>benzo[b]fluoranthene</b>	<b>0.47</b>	<b>125</b>	<b>0.46</b>	<b>123</b>	<b>0.44</b>	<b>101</b>	<b>0.40</b>	<b>106</b>
benzo[j]fluoranthene	0.27	22	0.29	22	0.27	22	0.28	22
benzo[k]fluoranthene	<0.21	201	<0.21	201	<0.16	201	<0.16	201
benzo[e]pyrene	0.44	79	0.29	118	0.31	86	0.24	110
<b>benzo[a]pyrene</b>	<b>0.33</b>	<b>158</b>	<b>0.35</b>	<b>150</b>	<b>0.33</b>	<b>122</b>	<b>0.29</b>	<b>139</b>
indeno[1,2,3-cd]pyrene	<0.28	201	<0.27	201	<0.26	201	<0.22	201
dibenz[ah]anthracene	<0.19	201	<0.19	201	<0.14	201	<0.14	201
benzo-[g,h,i]perylene	0.21	41	0.21	41	0.21	33	0.18	37
anthanthrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,l]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,e]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,i]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,h]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
coronene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
<b>PAH 4 Sum Lower µg/kg</b>	<b>2.06</b>		<b>1.93</b>		<b>1.99</b>		<b>1.69</b>	
<b>PAH 4 Sum Upper µg/kg</b>	<b>2.06</b>	<b>70</b>	<b>1.93</b>	<b>74</b>	<b>1.99</b>	<b>56</b>	<b>1.69</b>	<b>69</b>

OEC Sample No.	22350	22351	22354	22355
FERA LIMS No.	S13-064095	S13-064096	S13-064097	S13-064098
Description	Excellence Noir 90% Cocoa	Excellence Noir 90% Cocoa	Excellence 85% Cocoa	Excellence 85% Cocoa
<b>µg/kg fat weight</b>		U%	U%	U%
acenaphthylene	0.86	35	1.23i	29
acenaphthene	<1.2	201	<1.21	201
fluorene	3.16	85	2.73	98
phenanthrene	29.71	27	30.17	27
anthracene	2.06	26	2.02	26
fluoranthene	11.05i	30	12.08i	29
benzo[c]fluorene	0.83	22	0.67	22
pyrene	9.85i	33	10.58i	32
benzo[ghi]fluoranthene	1.27	23	1.50	22
<b>benz (a) anthracene</b>	<b>1.13</b>	<b>21</b>	<b>1.11</b>	<b>23</b>
benzo[b]naphtho[2,1-d]thiophene	<0.18	201	<0.3	201
cyclopenta[c,d]pyrene	0.40	17	0.10	25
<b>chrysene</b>	<b>1.50</b>	<b>22</b>	<b>1.64</b>	<b>22</b>
5-methylchrysene	0.04	201	0.04	201
<b>benzo[b]fluoranthene</b>	<b>0.78</b>	<b>42</b>	<b>0.93</b>	<b>36</b>
benzo[jj]fluoranthene	0.55	17	0.51	17
benzo[k]fluoranthene	0.29	78	0.28	80
benzo[e]pyrene	0.59	35	0.86	27
<b>benzo[a]pyrene</b>	<b>0.61</b>	<b>49</b>	<b>0.68</b>	<b>45</b>
indeno[1,2,3-cd]pyrene	<0.4	201	<0.44	201
dibenz[ah]anthracene	<0.12	201	<0.17	201
benzo-[g,h,i]perylene	0.37	19	0.41	19
anthanthrene	<0.1	201	<0.1	201
dibenzo[a,l]pyrene	<0.1	201	<0.1	201
dibenzo[a,e]pyrene	<0.1	201	<0.1	201
dibenzo[a,i]pyrene	<0.1	201	<0.1	201
dibenzo[a,h]pyrene	<0.1	201	<0.1	201
coronene	<0.1	201	<0.1	201
<b>PAH 4 Sum Lower µg/kg</b>	<b>4.02</b>		<b>4.36</b>	
<b>PAH 4 Sum Upper µg/kg</b>	<b>4.02</b>	<b>16</b>	<b>4.36</b>	<b>14</b>
			<b>3.86</b>	<b>20</b>
			<b>4.47</b>	<b>4.47</b>
				<b>17</b>

OEC Sample No.	22356	22357	22358	22359				
FERA LIMS No.	S13-064099	S13-064100	S13-064101	S13-064102				
Description	Excellence 70% Cocoa	Excellence 70% Cocoa	Fortissima 80% Cocoa	Fortissima 80% Cocoa				
<b>µg/kg fat weight</b>		U%	U%	U%				
acenaphthylene	0.70	53	0.84	46	37.63	22	43.56	22
acenaphthene	<1.71	201	<1.71	201	7.31	48	11.75	37
fluorene	1.97	189	2.41	155	10.01	38	11.71	38
phenanthrene	32.20	30	32.29	30	143.56	24	156.92	24
anthracene	0.93	54	0.97	52	15.45	22	17.07	22
fluoranthene	7.81i	49	7.72i	49	44.17	22	48.09	22
benzo[c]fluorene	0.69	22	0.61	22	1.58	21	1.75	21
pyrene	5.87	64	5.59	67	49.55	22	53.12	22
benzo[ghi]fluoranthene	0.51	65	0.55	60	6.31	16	6.67	16
<b>benz (a) anthracene</b>	<b>0.19</b>	<b>127</b>	<b>0.19</b>	<b>127</b>	<b>5.49</b>	<b>16</b>	<b>6.11</b>	<b>16</b>
benzo[b]naphtho[2,1-d]thiophene	<0.21	201	<0.19	201	0.24	60	<0.29	201
cyclopenta[c,d]pyrene	0.09	27	<0.05	201	2.49	16	2.82	16
<b>chrysene</b>	<b>0.35</b>	<b>93</b>	<b>0.31</b>	<b>104</b>	<b>7.05</b>	<b>16</b>	<b>7.84</b>	<b>16</b>
5-methylchrysene	<0.01	201	<0.01	201	<0.01	201	<0.01	201
<b>benzo[b]fluoranthene</b>	<b>0.29</b>	<b>146</b>	<b>0.26</b>	<b>162</b>	<b>4.96</b>	<b>18</b>	<b>5.35</b>	<b>18</b>
benzo[j]fluoranthene	0.27	22	0.23	24	3.60	17	3.74	17
benzo[k]fluoranthene	<0.16	201	<0.16	201	2.43	18	2.49	19
benzo[e]pyrene	0.15	174	<0.13	201	5.21	17	6.00	17
<b>benzo[a]pyrene</b>	<b>0.23</b>	<b>166</b>	<b>&lt;0.19</b>	<b>201</b>	<b>5.98</b>	<b>19</b>	<b>6.62</b>	<b>20</b>
indeno[1,2,3-cd]pyrene	<0.18	201	<0.16	201	2.96	17	3.29	17
dibenz[ah]anthracene	<0.14	201	<0.14	201	<0.31	201	<0.31	201
benzo-[g,h,i]perylene	0.12	52	0.10	62	3.43	16	3.79	16
anthanthrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,l]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,e]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,i]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,h]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
coronene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
<b>PAH 4 Sum Lower µg/kg</b>	<b>1.06</b>		<b>0.76</b>		<b>23.48</b>		<b>25.92</b>	
<b>PAH 4 Sum Upper µg/kg</b>	<b>1.06</b>	<b>129</b>	<b>0.95</b>	<b>153</b>	<b>23.48</b>	<b>4</b>	<b>25.92</b>	<b>3</b>

OEC Sample No.	22360	22361	22362	22363
FERA LIMS No.	S13-064103	S13-064104	S13-064105	S13-064106
Description	Vanuatu Amelonado 75% Cocoa	Vanuatu Amelonado 75% Cocoa	Chua 70% Chocoa	Chua 70% Chocoa
<b>µg/kg fat weight</b>		U%	U%	U%
acenaphthylene	32.24	23	30.51	23
acenaphthene	3.18	102	4.35	76
fluorene	23.43	25	22.88	25
phenanthrene	184.46i	23	183.64	23
anthracene	34.11	21	33.84	21
fluoranthene	65.02	21	64.30	21
benzo[c]fluorene	2.68	21	3.70	21
pyrene	63.75	21	63.21	21
benzo[ghi]fluoranthene	8.44	16	8.04	16
<b>benz (a) anthracene</b>	<b>10.37</b>	<b>16</b>	<b>10.32</b>	<b>16</b>
benzo[b]naphtho[2,1-d]thiophene	<0.23	201	<0.22	201
cyclopenta[c,d]pyrene	1.84	16	2.21	16
<b>chrysene</b>	<b>11.07</b>	<b>16</b>	<b>10.93</b>	<b>16</b>
5-methylchrysene	<0.02	201	0.02	201
<b>benzo[b]fluoranthene</b>	<b>4.30</b>	<b>18</b>	<b>4.27</b>	<b>18</b>
benzo[jj]fluoranthene	3.14	17	2.98	17
benzo[k]fluoranthene	1.88	19	1.93	19
benzo[e]pyrene	3.46	18	3.41	18
<b>benzo[a]pyrene</b>	<b>4.05</b>	<b>22</b>	<b>4.28</b>	<b>22</b>
indeno[1,2,3-cd]pyrene	1.99	19	2.00	19
dibenz[ah]anthracene	<0.3	201	<0.31	201
benzo-[g,h,i]perylene	1.80	16	1.85	16
anthanthrene	<0.1	201	<0.1	201
dibenzo[a,l]pyrene	<0.1	201	<0.1	201
dibenzo[a,e]pyrene	<0.1	201	<0.1	201
dibenzo[a,i]pyrene	<0.1	201	<0.1	201
dibenzo[a,h]pyrene	<0.1	201	<0.1	201
coronene	<0.1	201	<0.1	201
<b>PAH 4 Sum Lower µg/kg</b>	<b>29.79</b>		<b>29.80</b>	<b>1.78</b>
<b>PAH 4 Sum Upper µg/kg</b>	<b>29.79</b>	<b>3</b>	<b>29.80</b>	<b>67</b>
				<b>1.87</b>
				<b>42</b>

OEC Sample No.	22364	22365	22366	22367				
FERA LIMS No.	S13-064107	S13-064108	S13-064109	S13-064110				
Description	Tuscano Black 63% Chocoa	Tuscani Tuscano Black 63% Chocoa	Mokaya B10 Organic	Mokaya B10 Organic				
µg/kg fat weight	U%	U%	U%	U%				
acenaphthylene	<1.37	201	1.48	201	<1.26	201	<1.25	201
acenaphthene	4.04	94	3.41	111	1.82	188	<1.69	201
fluorene	3.48	111	3.59	108	1.85	190	2.01	173
phenanthrene	27.75	74	27.21	76	43.02	47	41.84	48
anthracene	0.67	136	0.70	133	1.14	77	1.19	72
fluoranthene	7.13	47	7.31	46	8.33	39	8.41	38
benzo[c]fluorene	0.54	22	0.69	22	0.81	22	0.76	22
pyrene	6.55	47	7.06	44	8.82	35	8.74	35
benzo[ghi]fluoranthene	0.60	19	0.67	20	0.76	18	0.75	18
<b>benz (a) anthracene</b>	<b>0.25</b>	<b>58</b>	<b>0.26</b>	<b>56</b>	<b>0.50</b>	<b>29</b>	<b>0.48</b>	<b>30</b>
benzo[b]naphtho[2,1-d]thiophene	<0.22	201	<0.22	201	<0.17	201	<0.17	201
cyclopenta[c,d]pyrene	<0.09	201	0.09	27	0.12	23	0.09	27
<b>chrysene</b>	<b>0.41</b>	<b>89</b>	<b>0.38</b>	<b>96</b>	<b>0.66</b>	<b>51</b>	<b>0.66</b>	<b>51</b>
5-methylchrysene	<0.01	201	<0.01	201	0.01	201	<0.01	201
<b>benzo[b]fluoranthene</b>	<b>0.40</b>	<b>72</b>	<b>0.40</b>	<b>72</b>	<b>0.39</b>	<b>69</b>	<b>0.37</b>	<b>72</b>
benzo[jj]fluoranthene	0.25	19	0.27	18	0.23	19	0.24	19
benzo[k]fluoranthene	0.08	201	0.06	201	0.10	181	0.12	151
benzo[e]pyrene	0.20	121	0.17	142	0.32	71	0.31	73
<b>benzo[a]pyrene</b>	<b>&lt;0.19</b>	<b>201</b>	<b>&lt;0.20</b>	<b>201</b>	<b>0.37</b>	<b>168</b>	<b>0.31</b>	<b>201</b>
indeno[1,2,3-cd]pyrene	<0.17	201	<0.17	201	<0.22	201	<0.22	201
dibenz[ah]anthracene	<0.12	201	<0.12	201	<0.11	201	<0.11	201
benzo-[g,h,i]perylene	0.15	31	0.14	33	0.21	25	0.20	25
anthanthrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,l]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,e]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,i]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,h]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
coronene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
<b>PAH 4 Sum Lower µg/kg</b>	<b>1.06</b>	<b>1.04</b>	<b>1.92</b>	<b>1.82</b>				
<b>PAH 4 Sum Upper µg/kg</b>	<b>1.25</b>	<b>94</b>	<b>1.24</b>	<b>97</b>	<b>1.92</b>	<b>63</b>	<b>1.82</b>	<b>71</b>

OEC Sample No.	22368	22369	22370	22371				
FERA LIMS No.	S13-064111	S13-064112	S13-064113	S13-064114				
Description	Dark Chocolate 70% Trio of Madagascan Peppers	Dark Chocolate 70% Trio of Madagascan Peppers	Grand Noir 85% Chocoaa	Grand Noir 85% Chocoaa				
<b>µg/kg fat weight</b>	U%	U%	U%	U%				
acenaphthylene	1.95	30	2.31	27	2.65	25	2.46	25
acenaphthene	<1.83	201	<1.77	201	<1.44	201	<1.51	201
fluorene	3.23	123	3.25	118	3.57	88	3.80	87
phenanthrene	49.04	24	48.61	24	41.54	24	46.28	24
anthracene	2.51	25	2.50	25	2.43	24	2.62	24
fluoranthene	17.02	26	19.47i	25	13.05	26	13.72i	26
benzo[c]fluorene	1.27	21	1.44	21	0.78	21	0.71	21
pyrene	21.45i	24	25.54i	23	11.50i	26	11.64i	26
benzo[ghi]fluoranthene	5.82	16	7.68	16	1.54	16	1.61	16
<b>benz (a) anthracene</b>	<b>4.09</b>	<b>16</b>	<b>5.20</b>	<b>16</b>	<b>1.32</b>	<b>16</b>	<b>1.25</b>	<b>17</b>
benzo[b]naphtho[2,1-d]thiophene	<0.24	201	<0.25	201	<0.29	201	<0.28	201
cyclopenta[c,d]pyrene	8.59	16	8.49	16	0.47	16	0.47	16
<b>chrysene</b>	<b>4.41</b>	<b>17</b>	<b>5.09</b>	<b>17</b>	<b>1.64</b>	<b>20</b>	<b>1.58</b>	<b>20</b>
5-methylchrysene	<0.01	201	<0.01	201	<0.01	201	<0.01	201
<b>benzo[b]fluoranthene</b>	<b>3.06</b>	<b>19</b>	<b>3.90</b>	<b>18</b>	<b>0.94</b>	<b>27</b>	<b>0.95</b>	<b>27</b>
benzo[jj]fluoranthene	2.65	17	3.30	17	0.63	17	0.63	17
benzo[k]fluoranthene	1.41	17	1.84	17	0.33	21	0.30	22
benzo[e]pyrene	2.81	17	3.54	17	0.64	18	0.66	18
<b>benzo[a]pyrene</b>	<b>4.31</b>	<b>19</b>	<b>5.54</b>	<b>18</b>	<b>0.68</b>	<b>47</b>	<b>0.64</b>	<b>53</b>
indeno[1,2,3-cd]pyrene	2.61	18	3.23	17	0.41	47	0.41	47
dibenz[ah]anthracene	<0.29	201	0.29	26	<0.13	201	<0.11	201
benzo-[g,h,i]perylene	2.85	16	3.55	16	0.44	18	0.43	18
anthanthrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,l]pyrene	<0.1	201	<0.1	66	<0.1	201	<0.1	201
dibenzo[a,e]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,i]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,h]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
coronene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
<b>PAH 4 Sum Lower µg/kg</b>	<b>15.87</b>		<b>19.73</b>		<b>4.58</b>		<b>4.42</b>	
<b>PAH 4 Sum Upper µg/kg</b>	<b>15.87</b>	<b>4</b>	<b>19.73</b>	<b>4</b>	<b>4.58</b>	<b>12</b>	<b>4.42</b>	<b>13</b>

OEC Sample No.	22372	22373	22374	22375				
FERA LIMS No.	S13-064115	S13-064116	S13-064117	S13-064118				
Description	Organic 70% Dark Chocolate	Organic 70% Dark Chocolate	Pure Dark Chocolate Powder	Pure Dark Chocolate Powder				
<b>µg/kg fat weight</b>		U%	U%	U%				
acenaphthylene	1.34	33	1.58	33	4.31	23	2.58	27
acenaphthene	3.11	27	<1.7	201	<1.79	201	<1.83	201
fluorene	<2.21	201	2.06	177	5.93	68	5.23	77
phenanthrene	25.03	40	27.70	29	45.40	25	44.39	25
anthracene	1.77	119	2.03	26	2.50	25	2.57	25
fluoranthene	9.09	46	9.86	33	11.79i	30	11.80	31
benzo[c]fluorene	0.49	23	0.57	21	0.57	21	0.62	22
pyrene	8.34i	51	9.91i	30	9.50i	31	9.24i	32
benzo[ghi]fluoranthene	1.16	29	1.27	16	1.09	16	1.08	16
<b>benz (a) anthracene</b>	<b>0.77</b>	<b>17</b>	<b>0.78</b>	<b>18</b>	<b>0.80</b>	<b>18</b>	<b>0.81</b>	<b>17</b>
benzo[b]naphtho[2,1-d]thiophene	<0.08	201	<0.1	201	<0.2	201	<0.18	201
cyclopenta[c,d]pyrene	0.35	17	0.47	16	0.30	17	0.25	18
<b>chrysene</b>	<b>0.91</b>	<b>18</b>	<b>0.98</b>	<b>29</b>	<b>1.10</b>	<b>27</b>	<b>1.06</b>	<b>29</b>
5-methylchrysene	<0.01	201	<0.01	201	<0.01	201	<0.01	201
<b>benzo[b]fluoranthene</b>	<b>0.44</b>	<b>52</b>	<b>0.43</b>	<b>58</b>	<b>0.74</b>	<b>37</b>	<b>0.72</b>	<b>40</b>
benzo[jj]fluoranthene	0.29	76	0.25	19	0.49	17	0.47	19
benzo[k]fluoranthene	0.16	22	0.15	43	0.24	30	0.24	30
benzo[e]pyrene	0.29	22	0.28	27	0.46	21	0.47	21
<b>benzo[a]pyrene</b>	<b>0.29</b>	<b>112</b>	<b>0.36</b>	<b>101</b>	<b>0.46</b>	<b>84</b>	<b>0.48</b>	<b>81</b>
indeno[1,2,3-cd]pyrene	<0.2	201	<0.21	201	<0.4	201	0.34	67
dibenz[ah]anthracene	<0.08	201	<0.08	201	<0.13	201	<0.13	201
benzo-[g,h,i]perylene	0.19	19	0.17	28	0.37	19	0.38	19
anthanthrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,l]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,e]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,i]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,h]pyrene	<0.13	201	<0.1	201	<0.1	201	<0.1	201
coronene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
<b>PAH 4 Sum Lower µg/kg</b>	<b>2.41</b>		<b>2.55</b>		<b>3.10</b>		<b>3.07</b>	
<b>PAH 4 Sum Upper µg/kg</b>	<b>2.41</b>	<b>30</b>	<b>2.55</b>	<b>31</b>	<b>3.10</b>	<b>23</b>	<b>3.07</b>	<b>24</b>

OEC Sample No.	22376	22377	22378	22379
FERA LIMS No.	S13-064119	S13-064120	S13-064121	S13-064122
Description	Cacao Venezuelan Gold	Cacao Venezuelan Gold	Cacao Luscious Orange	Cacao Luscious Orange
<b>µg/kg fat weight</b>		U%	U%	U%
acenaphthylene	0.95	38	0.75	45
acenaphthene	4.20	92	2.03	183
fluorene	6.63	65	5.12	81
phenanthrene	35.14	28	32.67	29
anthracene	1.17	36	1.07	38
fluoranthene	7.49	50	6.74	54
benzo[c]fluorene	0.33	24	0.35	24
pyrene	9.14i	39	8.15i	42
benzo[ghi]fluoranthene	1.03	17	0.90	17
<b>benz (a) anthracene</b>	<b>0.21</b>	<b>25</b>	<b>0.21</b>	<b>25</b>
benzo[b]naphtho[2,1-d]thiophene	<0.17	201	<0.15	201
cyclopenta[c,d]pyrene	0.16	20	0.16	20
<b>chrysene</b>	<b>0.26</b>	<b>35</b>	<b>0.27</b>	<b>34</b>
5-methylchrysene	<0.01	201	<0.01	201
<b>benzo[b]fluoranthene</b>	<b>0.39</b>	<b>23</b>	<b>0.40</b>	<b>23</b>
benzo[j]fluoranthene	0.17	29	0.21	25
benzo[k]fluoranthene	<0.12	201	0.11	201
benzo[e]pyrene	0.28	22	0.37	20
<b>benzo[a]pyrene</b>	<b>&lt;0.21</b>	<b>201</b>	<b>0.27</b>	<b>156</b>
indeno[1,2,3-cd]pyrene	<0.27	201	<0.34	201
dibenz[ah]anthracene	<0.12	201	<0.12	201
benzo-[g,h,i]perylene	0.26	22	0.34	20
anthanthrene	<0.1	201	<0.1	201
dibenzo[a,l]pyrene	<0.1	201	<0.1	201
dibenzo[a,e]pyrene	<0.1	201	<0.1	201
dibenzo[a,i]pyrene	<0.1	201	<0.1	201
dibenzo[a,h]pyrene	<0.1	201	<0.1	201
coronene	<0.1	201	<0.1	201
<b>PAH 4 Sum Lower µg/kg</b>	<b>0.86</b>	<b>1.15</b>	<b>0.90</b>	<b>0.87</b>
<b>PAH 4 Sum Upper µg/kg</b>	<b>1.07</b>	<b>89</b>	<b>1.15</b>	<b>74</b>
			<b>1.10</b>	<b>84</b>
			<b>1.08</b>	<b>88</b>

OEC Sample No.	22380	22381	22382	22383				
FERA LIMS No.	S13-064123	S13-064124	S13-064125	S13-064126				
Description	Organic 71% Cocoa	Organic 71% Cocoa	70% Dark Chocolate with Raspberries	70% Dark Chocolate with Raspberries				
<b>µg/kg fat weight</b>		U%	U%	U%	U%	U%		
acenaphthylene	<0.38	201	<0.35	201	1.11	31	1.22	30
acenaphthene	<1.97	201	<1.87	201	<1.62	201	<1.66	201
fluorene	<2.15	201	<2.03	201	<1.76	201	1.80	201
phenanthrene	16.90	46	15.98	46	31.70	28	32.03	28
anthracene	0.95	43	0.96	41	1.08	35	1.20	33
fluoranthene	4.41	84	4.03	87	8.06	42	8.34	42
benzo[c]fluorene	0.22	34	0.19	30	0.66	22	0.57	22
pyrene	2.77	115	2.58	117	6.45i	45	6.21	47
benzo[ghi]fluoranthene	0.20	34	0.17	39	0.71	18	0.73	18
<b>benz (a) anthracene</b>	<b>0.37</b>	<b>19</b>	<b>0.34</b>	<b>20</b>	<b>0.35</b>	<b>17</b>	<b>0.37</b>	<b>17</b>
benzo[b]naphtho[2,1-d]thiophene	<0.11	201	<0.09	201	<0.14	201	<0.15	201
cyclopenta[c,d]pyrene	<0.03	201	<0.01	201	0.13	22	<0.12	201
<b>chrysene</b>	<b>0.37</b>	<b>23</b>	<b>0.31</b>	<b>25</b>	<b>0.53</b>	<b>19</b>	<b>0.51</b>	<b>20</b>
5-methylchrysene	<0.01	201	<0.01	201	<0.01	201	<0.01	201
<b>benzo[b]fluoranthene</b>	<b>0.31</b>	<b>26</b>	<b>0.25</b>	<b>29</b>	<b>0.60</b>	<b>20</b>	<b>0.54</b>	<b>20</b>
benzo[jj]fluoranthene	0.13	35	0.13	35	0.33	21	0.37	20
benzo[k]fluoranthene	<0.12	201	<0.12	201	0.12	168	0.11	183
benzo[e]pyrene	0.22	25	0.23	24	0.32	21	0.31	21
<b>benzo[a]pyrene</b>	<b>0.22</b>	<b>201</b>	<b>0.23</b>	<b>183</b>	<b>0.27</b>	<b>134</b>	<b>0.27</b>	<b>142</b>
indeno[1,2,3-cd]pyrene	<0.28	201	<0.24	201	<0.26	201	<0.25	201
dibenz[ah]anthracene	<0.13	201	<0.12	201	<0.1	201	<0.11	201
benzo-[g,h,i]perylene	0.32	20	0.29	21	0.23	24	0.22	24
anthanthrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,l]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,e]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,i]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,h]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
coronene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
<b>PAH 4 Sum Lower µg/kg</b>	<b>1.27</b>		<b>1.13</b>		<b>1.75</b>		<b>1.69</b>	
<b>PAH 4 Sum Upper µg/kg</b>	<b>1.27</b>	<b>76</b>	<b>1.13</b>	<b>81</b>	<b>1.75</b>	<b>42</b>	<b>1.69</b>	<b>46</b>

OEC Sample No.	22384	22385	22386	22387				
FERA LIMS No.	S13-064127	S13-064128	S13-064129	S13-064130				
Description	Peruvian Dark Chocolate with Sweetened Dried Cranberries	Peruvian Dark Chocolate with Sweetened Dried Cranberries	70% Dark Choclate Intensely Rich	70% Dark Choclate Intensely Rich				
<b>µg/kg fat weight</b>		U%	U%	U%	U%	U%		
acenaphthylene	<0.49	201	0.37	89	1.35	145	1.25	155
acenaphthene	<2.01	201	<1.99	201	1.44	180	1.37	187
fluorene	<2.18	201	<2.16	201	2.76	119	2.76	118
phenanthrene	19.67	41	18.08	44	37.71	24	35.70	25
anthracene	0.67	58	0.52	72	1.54	30	1.26	32
fluoranthene	6.39	61	6.06	63	9.31i	31	9.02i	32
benzo[c]fluorene	0.43	25	0.32	28	0.62	21	0.57	21
pyrene	5.02	67	4.70	70	7.17i	23	7.08i	22
benzo[ghi]fluoranthene	0.72	19	0.62	20	0.77	17	0.77	17
<b>benz (a) anthracene</b>	<b>0.25</b>	<b>22</b>	<b>0.23</b>	<b>24</b>	<b>0.45</b>	<b>18</b>	<b>0.39</b>	<b>19</b>
benzo[b]naphtho[2,1-d]thiophene	<0.07	201	<0.06	201	<0.2	201	<0.17	201
cyclopenta[c,d]pyrene	0.17	20	<0.14	201	0.17	20	0.20	19
<b>chrysene</b>	<b>0.38</b>	<b>22</b>	<b>0.37</b>	<b>23</b>	<b>0.72</b>	<b>19</b>	<b>0.62</b>	<b>20</b>
5-methylchrysene	<0.01	201	<0.01	201	<0.01	201	<0.01	201
<b>benzo[b]fluoranthene</b>	<b>0.46</b>	<b>21</b>	<b>0.46</b>	<b>21</b>	<b>0.62</b>	<b>39</b>	<b>0.55</b>	<b>43</b>
benzo[jj]fluoranthene	0.29	22	0.24	24	0.43	19	0.40	20
benzo[k]fluoranthene	0.14	172	<0.12	201	0.13	49	0.13	49
benzo[e]pyrene	0.31	21	0.32	21	0.38	20	0.30	22
<b>benzo[a]pyrene</b>	<b>0.31</b>	<b>149</b>	<b>0.31</b>	<b>149</b>	<b>0.33</b>	<b>104</b>	<b>0.27</b>	<b>127</b>
indeno[1,2,3-cd]pyrene	<0.36	201	0.27	90	<0.31	201	<0.27	201
dibenz[ah]anthracene	<0.13	201	<0.13	201	<0.11	201	<0.1	201
benzo-[g,h,i]perylene	0.33	20	0.30	21	0.31	20	0.26	22
anthanthrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,l]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,e]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,i]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,h]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
coronene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
<b>PAH 4 Sum Lower µg/kg</b>	<b>1.40</b>		<b>1.37</b>		<b>2.12</b>		<b>1.83</b>	
<b>PAH 4 Sum Upper µg/kg</b>	<b>1.40</b>	<b>62</b>	<b>1.37</b>	<b>63</b>	<b>2.12</b>	<b>33</b>	<b>1.83</b>	<b>42</b>

OEC Sample No.	22389	22390	22391	22388				
FERA LIMS No.	S13-064132	S13-064133	S13-064134	S13-064131				
Description	Ecuadorian Dark Chocolate	Ecuadorian Dark Chocolate	Smooth Dark Chocolate	Smooth Dark Chocolate				
<b>µg/kg fat weight</b>		U%	U%	U%				
acenaphthylene	1.34	157	<1.04	201	9.19	31	9.51	31
acenaphthene	2.36	119	1.61	173	6.18	48	6.62	48
fluorene	2.74	129	2.38	147	9.39	42	9.19	44
phenanthrene	45.06	24	46.44	24	71.94	22	76.10	22
anthracene	4.02	23	4.17	23	7.18	21	7.85	21
fluoranthene	26.15i	23	25.47i	23	20.75i	24	23.01i	23
benzo[c]fluorene	1.10	21	1.32	21	1.07	21	1.05	21
pyrene	21.72i	21	21.61i	21	18.52i	21	19.39i	21
benzo[ghi]fluoranthene	2.29	16	2.37	16	2.47	16	2.46	16
<b>benz (a) anthracene</b>	<b>4.55</b>	<b>16</b>	<b>4.64</b>	<b>16</b>	<b>2.32</b>	<b>16</b>	<b>2.47</b>	<b>16</b>
benzo[b]naphtho[2,1-d]thiophene	1.34	16	1.31	16	0.27	22	0.27	22
cyclopenta[c,d]pyrene	0.33	17	0.51	16	0.80	16	0.78	16
<b>chrysene</b>	<b>4.90</b>	<b>16</b>	<b>4.66</b>	<b>16</b>	<b>2.92</b>	<b>16</b>	<b>3.02</b>	<b>16</b>
5-methylchrysene	<0.01	201	<0.02	201	<0.01	201	<0.01	201
<b>benzo[b]fluoranthene</b>	<b>2.77</b>	<b>19</b>	<b>2.61</b>	<b>19</b>	<b>1.23</b>	<b>26</b>	<b>1.34</b>	<b>25</b>
benzo[j]fluoranthene	1.34	17	1.40	17	0.82	18	0.90	17
benzo[k]fluoranthene	1.18	18	1.22	18	0.43	22	0.48	21
benzo[e]pyrene	2.38	17	2.22	17	1.04	17	1.19	17
<b>benzo[a]pyrene</b>	<b>2.39</b>	<b>23</b>	<b>2.36</b>	<b>23</b>	<b>1.06</b>	<b>38</b>	<b>1.12</b>	<b>38</b>
indeno[1,2,3-cd]pyrene	1.61	16	1.60	16	0.71	18	0.75	18
dibenz[ah]anthracene	<0.45	201	<0.37	201	<0.16	201	<0.16	201
benzo-[g,h,i]perylene	1.52	16	1.54	16	0.71	17	0.77	17
anthanthrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,l]pyrene	<0.1	201	<0.1	61	<0.1	201	<0.1	201
dibenzo[a,e]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
dibenzo[a,i]pyrene	<0.1	201	<0.13	201	<0.1	201	<0.1	201
dibenzo[a,h]pyrene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
coronene	<0.1	201	<0.1	201	<0.1	201	<0.1	201
<b>PAH 4 Sum Lower µg/kg</b>	<b>14.61</b>		<b>14.27</b>		<b>7.53</b>		<b>7.95</b>	
<b>PAH 4 Sum Upper µg/kg</b>	<b>14.61</b>	<b>5</b>	<b>14.27</b>	<b>5</b>	<b>7.53</b>	<b>8</b>	<b>7.95</b>	<b>8</b>

## Table 4. Quality Control Procedures

In order to demonstrate that adequate confidence can be placed in the results obtained, the following requirements were observed.

Each batch of samples analysed included a full reagent blank, the contribution from which was found to be negligible. For further confidence each batch of samples analysed included a reference material (T0651 Palm Oil), for which results were compared with a criteria range derived from the assigned consensus data from multiple laboratory testing. Results for the batch RM fall within the acceptable range.

### Quality Control Results

Compound	T0651 Palm Oil Reference Material Acceptance Criteria			Batch RM				
	Assigned Value ( $\mu\text{g}/\text{kg}$ ) From Consensus Data	Target Standard deviation $\sigma$ $\mu\text{g}/\text{kg}$	Acceptable Range $\mu\text{g}/\text{kg}$	PAH 833	PAH 834	PAH 836	PAH 838	PAH 839
benz (a) anthracene	2.34	0.515	1.83-2.86	2.20	2.24	2.28	2.38	2.31
benzo[b]fluoranthene	1.97	0.434	1.54-2.40	1.74	1.70	1.85	1.83	1.81
benzo[a]pyrene	1.58	0.347	1.23-1.93	1.52	1.50	1.60	1.59	1.55
indeno[1,2,3-cd]pyrene	1.56	0.344	1.22-1.90	1.41	1.43	1.48	1.47	1.39
benzo-[g,h,i]perylene	1.57	0.345	1.23-1.92	1.39	1.32	1.47	1.51	1.44
chrysene	2.86	0.630	2.23-3.49	2.53	2.63	2.69	2.76	2.79
PAH4 (sum)	8.50	1.870	6.63-10.37	7.99	8.07	8.42	8.56	8.46

**T0651 Palm Oil Reference Material Acceptance Criteria**
**Batch RM**

<b>Compound</b>	<b>Assigned Value (<math>\mu\text{g/kg}</math>) From Consensus Data</b>	<b>Target Standard deviation <math>\sigma_p</math> <math>\mu\text{g/kg}</math></b>	<b>Acceptable Range <math>\mu\text{g/kg}</math></b>	<b>PAH 851</b>	<b>PAH 841</b>	<b>PAH 842</b>	<b>PAH 845</b>	<b>PAH 846</b>
<b>benz (a) anthracene</b>	2.34	0.515	1.83-2.86	2.23	2.16	2.10	2.32	2.20
<b>benzo[b]fluoranthene</b>	1.97	0.434	1.54-2.40	1.72	1.69	1.57	1.72	1.70
<b>benzo[a]pyrene</b>	1.58	0.347	1.23-1.93	1.50	1.48	1.40	1.47	1.44
<b>indeno[1,2,3-cd]pyrene</b>	1.56	0.344	1.22-1.90	1.40	1.41	1.31	1.43	1.40
<b>benzo-[g,h,i]perylene</b>	1.57	0.345	1.23-1.92	1.42	1.41	1.34	1.45	1.39
<b>chrysene</b>	2.86	0.630	2.23-3.49	2.59	2.50	2.40	2.66	2.54
<b>PAH4 (sum)</b>	8.50	1.870	6.63-10.37	8.04	7.83	7.47	8.17	7.88

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