



**BUREAU  
VERITAS**

CONSUMER PRODUCTS SERVICES DIVISION

## OPTOSUPPLY LIMITED

**Technical Report:** (5212)081-1611  
Date Received: March 21, 2012

April 03, 2012  
Page 1 of 10

AMY  
OPTOSUPPLY LIMITED  
UNIT 1207, 12/F, WAH YIU INDUSTRIAL CENTRE  
30-32 AU PUI WAN STREET  
FO TAN  
NEW TERRITORIES  
HONG KONG

Sample Description:	LED	Sample Size:	1 LOT(S)
Vendor:	N/A	Style No(s):	N/A
Manufacturer:	N/A	SKN/SKU No.:	N/A
Buyer:	N/A	PO No.:	N/A
Labeled Age Grade:	NOT PRESENT	Ref #:	N/A
Appropriate Age Grade:	N/A	Country of Origin:	NO INFORMATION
Client Specified Age	NOT SPECIFIED		
Grade:			
Tested Age Grade:	N/A	Assortment No.:	N/A
UPC Code:	N/A		

### **EXECUTIVE SUMMARY:**

The sample(s) MEET the following requirement(s):

- The chemical content requirements of the client's specification with reference to the Candidate List of Substances of Very High Concern for authorization published by European Chemicals Agency (ECHA) Regarding Regulation (EC) No. 1907/2006 concerning REACH.

BUREAU VERITAS HONG KONG LIMITED

Lai Ka Yan, Margaret  
Senior Manager  
Chemical Department

ML/ww



**RESULTS:**

**TEST RESULT**

**Candidate List of Substances of Very High Concern for authorization published by European Chemicals Agency (ECHA) Regarding Regulation (EC) No. 1907/2006 concerning REACH**

Test Item 1:	LED	Total weight:	0.2926g
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No.	Substance name	CAS No.	EC No.	Result, %	Detection Limit, %	Basis for identification as a SVHC
				1		
1	Triethyl arsenate*	15606-95-8	427-700-2	ND	0.01	Carcinogen, cat. 1
2	Anthracene	120-12-7	204-371-1	ND	0.01	PBT
3	4,4'-Diaminodiphenyl methane (MDA)	101-77-9	202-974-4	ND	0.01	Carcinogen, cat. 2
4	Dibutyl phthalate (DBP)	84-74-2	201-557-4	ND	0.01	Toxic for reproduction, cat. 2
5	Cobalt dichloride*	7646-79-9	231-589-4	ND	0.01	Carcinogen, cat. 2
6	Diarsenic pentaoxide*	1303-28-2	215-116-9	ND	0.01	Carcinogen, cat. 1
7	Diarsenic trioxide*	1327-53-3	215-481-4	ND	0.01	Carcinogen, cat. 1
8	Sodium dichromate*	7789-12-0 <sup>(1)</sup> 10588-01-9 <sup>(2)</sup>	234-190-3	ND	0.01	Carcinogen, cat. 2; Mutagen, cat. 2; Toxic for reproduction, cat. 2
9	5-tert-butyl-2,4,6-trinitro-m-xylene (musk xylene)	81-15-2	201-329-4	ND	0.01	vPvB
10	Bis (2-ethylhexyl) phthalate (DEHP)	117-81-7	204-211-0	ND	0.01	Toxic for reproduction, cat. 2
11	Hexabromo cyclododecane (HBCDD) and all major diastereoisomers identified: α - HBCDD β - HBCDD γ - HBCDD	3194-55-6 <sup>(3)</sup> 25637-99-4 <sup>(4)</sup> 134237-50-6 134237-51-7 134237-52-8	247-148-4, 221-695-9	ND	0.01	PBT
12	Alkanes, C10-13, chloro (Short Chain Chlorinated Paraffins) (SCCP)	85535-84-8	287-476-5	ND	0.01	PBT, vPvB
13	Bis(tributyltin)oxide (TBTO)**	56-35-9	200-268-0	ND	0.01	PBT
14	Lead hydrogen arsenate*	7784-40-9	232-064-2	ND	0.01	Carcinogen, cat. 1; Toxic for reproduction, cat. 1



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Test Item 1:	LED	Total weight:	0.2926g
--------------	-----	---------------	---------

No.	Substance name	CAS No.	EC No.	Result, %	Detection Limit, %	Basis for identification as a SVHC
				1		
15	Benzyl butyl phthalate (BBP)	85-68-7	201-622-7	ND	0.01	Toxic for reproduction, cat. 2
16	2,4-Dinitrotoluene	121-14-2	204-450-0	ND	0.01	Carcinogen, cat. 2
17	Anthracene oil	90640-80-5	292-602-7	ND	0.05	Carcinogen, cat. 2, PBT, vPvB
18	Anthracene oil, anthracene paste, distr. Lights	91995-17-4	295-278-5	ND	0.05	Carcinogen, cat. 2; Mutagen, cat. 2, PBT, vPvB
19	Anthracene oil, anthracene paste, anthracene fraction	91995-15-2	295-275-9	ND	0.05	Carcinogen, cat. 2; Mutagen, cat. 2, PBT, vPvB
20	Anthracene oil, anthracene-low	90640-82-7	292-604-8	ND	0.05	Carcinogen, cat. 2; Mutagen, cat. 2, PBT, vPvB



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No.	Substance name	CAS No.	EC No.	Result, %	Detection Limit, %	Basis for identification as a SVHC
				1		
21	Anthracene oil, anthracene paste	90640-81-6	292-603-2	ND	0.05	Carcinogen, cat. 2; Mutagen, cat. 2, PBT, vPvB
22	Diisobutyl phthalate	84-69-5	201-553-2	ND	0.01	Toxic for reproduction, cat. 2
23	Aluminosilicate, Refractory Ceramic Fibres <sup>a</sup>	Index no. 650-017-00-8		ND	0.01	Carcinogen, cat. 2
24	Zirconia Aluminosilicate, Refractory Ceramic Fibres <sup>b</sup>	Index no. 650-017-00-8		ND	0.01	Carcinogen, cat. 2
25	Lead chromate*	7758-97-6	231-846-0	ND	0.01	Carcinogen, cat. 2; Toxic for reproduction, cat. 1
26	Lead chromate molybdate sulfate red (C.I. Pigment Red 104)*	12656-85-8	235-759-9	ND	0.01	Carcinogen, cat. 2; Toxic for reproduction, cat. 1
27	Lead sulfochromate yellow (C.I. Pigment Yellow 34)*	1344-37-2	215-693-7	ND	0.01	Carcinogen, cat. 2; Toxic for reproduction, cat. 1
28	Tris(2-chloroethyl) phosphate	115-96-8	204-118-5	ND	0.01	Toxic for reproduction, cat. 2
29	Coal tar pitch, high temperature	65996-93-2	266-028-2	ND	0.05	Carcinogen, cat. 2, PBT, vPvB
30	Acrylamide	79-06-1	201-173-7	ND	0.01	Carcinogen, cat. 2; Mutagen, cat. 2
31	Trichloroethylene	79-01-6	201-167-4	ND	0.01	Carcinogen, cat. 2
32	Boric acid*	10043-35-3, 11113-50-1	233-139-2 / 234-343-4	ND	0.01	Toxic for reproduction, cat. 2
33	Disodium tetraborate, anhydrous*	1330-43-3 <sup>(6)</sup> , 12179-04-3 <sup>(6)</sup> , 1303-96-4 <sup>(7)</sup>	215-540-4	ND	0.01	Toxic for reproduction, cat. 2
34	Tetraboron disodium heptaoxide, hydrate*	12267-73-1	235-541-3	ND	0.01	Toxic for reproduction, cat. 2



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No.	Substance name	CAS No.	EC No.	Result, %	Detection Limit, %	Basis for identification as a SVHC
				1		
35	Sodium chromate*	7775-11-3	231-889-5	ND	0.01	Carcinogen, cat. 2; Mutagen, cat. 2; Toxic for reproduction, cat. 2
36	Potassium chromate*	7789-00-6	232-140-5	ND	0.01	Carcinogen, cat. 2; Mutagen, cat. 2
37	Ammonium dichromate*	7789-09-5	232-143-1	ND	0.01	Carcinogen, cat. 2; Mutagen, cat. 2; Toxic for reproduction, cat. 2
38	Potassium dichromate*	7778-50-9	231-906-6	ND	0.01	Carcinogen, cat. 2; Mutagen, cat. 2; Toxic for reproduction, cat. 2
39	Cobalt(II) sulphate*	10124-43-3	233-334-2	ND	0.01	Carcinogen, cat. 2; Toxic for reproduction, cat. 2



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No.	Substance name	CAS No.	EC No.	Result, %	Detection Limit, %	Basis for identification as a SVHC
				1		
40	Cobalt(II) dinitrate*	10141-05-6	233-402-1	ND	0.01	Carcinogen, cat. 2; Toxic for reproduction, cat. 2
41	Cobalt(II) carbonate*	513-79-1	208-169-4	ND	0.01	Carcinogen, cat. 2; Toxic for reproduction, cat. 2
42	Cobalt(II) diacetate*	71-48-7	200-755-8	ND	0.01	Carcinogen, cat. 2; Toxic for reproduction, cat. 2
43	2-Methoxyethanol	109-86-4	203-713-7	ND	0.05	Toxic for reproduction, cat. 2
44	2-Ethoxyethanol	110-80-5	203-804-1	ND	0.05	Toxic for reproduction, cat. 2
45	Chromium trioxide*	1333-82-0	215-607-8	ND	0.01	Carcinogen, cat. 1; Mutagen, cat. 2
46	Acid generated from chromium trioxide and their oligomers:			ND	0.01	Carcinogen, cat. 2
	Chromic acid*	7738-94-5	231-801-5			
	Dichromic acid*	13530-68-2	236-881-5			
	Oligomers of chromic acid and dichromic acid*	-	-			
47	2-Ethoxyethyl acetate	111-15-9	203-839-2	ND	0.01	Toxic for reproduction, cat. 2
48	Strontium Chromate*	7789-06-2	232-142-6	ND	0.01	Carcinogen, cat. 2
49	1,2-benzenedicarboxylic acid, di-C7-11 branched alkyl ester and linear alkyl ester	68515-42-4	271-084-6	ND	0.01	Toxic for reproduction, cat. 2
50	Hydrazine	302-01-2 7803-57-8	206-114-9	ND	0.01	Carcinogen, cat. 2
51	1-Methyl-2-pyrrolidone	872-50-4	212-828-1	ND	0.01	Toxic for reproduction, cat. 2
52	1,2,3-trichloropropane	96-18-4	202-486-1	ND	0.01	Toxic for reproduction, cat. 2



**RESULTS:**

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No.	Substance name	CAS No.	EC No.	Result, %	Detection Limit, %	Basis for identification as a SVHC
				1		
53	1,2-benzenedicarboxylic acid, di-C6-8-branched alkyl ester, C7-rich (DIHP)	71888-89-6	276-158-1	ND	0.01	Toxic for reproduction, cat. 2
54	Dichromium tris(chromate)*	24613-89-6	246-356-2	ND	0.05	Carcinogen, cat. 2
55	Potassium hydroxyoctaoxidizincatedi-chromate*	11103-86-9	234-329-8	ND	0.05	Carcinogen, cat. 1
56	Pentazinc chromate octahydroxide*	49663-84-5	256-418-0	ND	0.05	Carcinogen, cat. 1
57	Aluminosilicate, Refractory Ceramic Fibres* <sup>c</sup>	Index no. 650-017-00-8		ND	0.01	Carcinogen, cat. 2



**RESULTS:**

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No.	Substance name	CAS No.	EC No.	Result, %	Detection Limit, %	Basis for identification as a SVHC
				1		
58	Zirconia Aluminosilicate, Refractory Ceramic Fibres* <sup>d</sup>	Index no. 650-017-00-8		ND	0.01	Carcinogen, cat. 2
59	Formaldehyde, oligomeric reaction products with aniline (technical MDA)	25214-70-4	500-036-1	ND	0.05	Carcinogen, cat. 2
60	Bis(2-methoxyethyl) phthalate	117-82-8	204-212-6	ND	0.05	Toxic for reproduction, cat. 2
61	2-Methoxyaniline; o-Anisidine	90-04-0	201-963-1	ND	0.05	Carcinogen, cat. 2
62	4-(1,1,3,3-tetramethylbutyl)phenol, (4-tert-Octylphenol)	140-66-9	205-426-2	ND	0.05	Equivalent level of concern
63	1,2-Dichloroethane	107-06-2	203-458-1	ND	0.05	Carcinogen, cat. 2
64	Bis(2-methoxyethyl) ether	111-96-6	203-924-4	ND	0.05	Toxic for reproduction, cat. 2
65	Arsenic acid*	7778-39-4	231-901-9	ND	0.05	Carcinogen, cat. 1
66	Calcium arsenate*	7778-44-1	231-904-5	ND	0.05	Carcinogen, cat. 1
67	Trilead diarsenate*	3687-31-8	222-979-5	ND	0.05	Carcinogen, cat. 1; Toxic for reproduction, cat. 1
68	N,N-dimethylacetamide (DMAC)	127-19-5	204-826-4	ND	0.05	Toxic for reproduction, cat. 2
69	2,2'-dichloro-4,4'-methylenedianiline (MOCA)	101-14-4	202-918-9	ND	0.05	Carcinogen, cat. 2
70	Phenolphthalein	77-09-8	201-004-7	ND	0.05	Carcinogen, cat. 2
71	Lead azide, Lead diazide*	13424-46-9	236-542-1	ND	0.05	Toxic for reproduction, cat. 1
72	Lead styphnate*	15245-44-0	239-290-0	ND	0.05	Toxic for reproduction, cat. 1
73	Lead dipicrate*	6477-64-1	229-335-2	ND	0.05	Toxic for reproduction, cat. 1

- (1) CAS no. 7789-12-0 refers to sodium dichromate dihydrate
- (2) CAS no. 10588-01-9 refers to anhydrous sodium dichromate
- (3) CAS no. 3194-55-6 refers to a specific HBCDD - 1,2,5,6,9,10-hexabromocyclododecane
- (4) CAS no. 25637-99-4 refers to unspecific HBCDD isomer composition
- (5) CAS no. 1330-43-3 refers to disodium tetraborate, anhydrous
- (6) CAS no. 12179-04-3 refers to sodium tetraborate, pentahydrate
- (7) CAS no. 1303-96-4 refers to sodium tetraborate, decahydrate

Method: Analysis is based on GC, LC, IC, ICP, with various detection techniques and UV.





**RESULTS:**

Remark:

1. PBT = Persistent, bio accumulative and toxic as defined in Regulation (EC) No 1907/2006
2. vPvB = Very persistent and very bio accumulative as defined in Regulation (EC) No 1907/2006
3. ND = Not Detected
4. If the article contains a material type whose weight is <0.1% of the total article weight, this material type is ignored for testing.
5. \*Result is based on the heavy metal or inorganic element concentration. Due to the limit of the analytical technology available, any further investigation is not feasible. The client is strongly advised to review the chemical formulation to ascertain.
6. \*\*Result is identified by tributyltin (TBT). Due to the limit of the analytical technology available, any further investigation is not feasible. The client is strongly advised to review the chemical formulation to ascertain.
7. <sup>a</sup>Refer to Aluminosilicate, Refractory Ceramic Fibres fulfil the two following conditions: a) Al<sub>2</sub>O<sub>3</sub> and SiO<sub>2</sub> are present within the following concentration ranges: Al<sub>2</sub>O<sub>3</sub>: 43.5 - 47 % w/w, and SiO<sub>2</sub>: 49.5 - 53.5 % w/w, or Al<sub>2</sub>O<sub>3</sub>: 45.5 - 50.5 % w/w, and SiO<sub>2</sub>: 48.5 - 54 % w/w, b) fibres have a length weighted geometric mean diameter less two standard geometric errors of 6 or less micrometres (µm).
8. <sup>b</sup>Refer to Zirconia Aluminosilicate, Refractory Ceramic Fibres fulfil the two following conditions: a) Al<sub>2</sub>O<sub>3</sub>, SiO<sub>2</sub> and ZrO<sub>2</sub> are present within the following concentration ranges: Al<sub>2</sub>O<sub>3</sub>: 35 – 36 % w/w, and SiO<sub>2</sub>: 47.5 – 50 % w/w, and ZrO<sub>2</sub>: 15 - 17 % w/w, b) fibres have a length weighted geometric mean diameter less two standard geometric errors of 6 or less micrometres (µm).
9. <sup>c</sup>Refer to Aluminosilicate, Refractory Ceramic Fibres fulfil the three following conditions: a) oxides of aluminium and silicon are the main components present (in the fibres) within variable concentration ranges b) fibres have a length weighted geometric mean diameter less two standard geometric errors of 6 or less micrometres (µm) c) alkaline oxide and alkali earth oxide (Na<sub>2</sub>O+K<sub>2</sub>O+CaO+MgO+BaO) content less or equal to 18% by weight.
10. <sup>d</sup>Refer to Zirconia Aluminosilicate, Refractory Ceramic Fibres fulfil the three following conditions: a) oxides of aluminium, silicon and zirconium are the main components present (in the fibres) within variable concentration ranges b) fibres have a length weighted geometric mean diameter less two standard geometric errors of 6 or less micrometres (µm). c) alkaline oxide and alkali earth oxide (Na<sub>2</sub>O+K<sub>2</sub>O+CaO+MgO+BaO) content less or equal to 18% by weight.



**RESULTS:**

Note:

1. The limit of 0.1% (w/w) applies to an article. The results were calculated assuming as the submitted sample was an article. However, the results may not be applicable if the intended use of the sample is a substance or mixture. According to REACH, definition of an article, substance and mixture are:
  - i. Article - An object during production is given a special shape, surface or design which determines its function to a greater degree than does its chemical composition
  - ii. Substance - A chemical element and its compound in the natural state or obtained by any manufacturing process
  - iii. Mixture (Previously known as "Preparation") - A mixture or solution composed of two or more substances
2. In accordance of Article 7 of Regulation (EC) No. 1907/2006 (REACH regulation) – Registration and notification of substances in articles, any producer or importer of articles shall notify ECHA, if a substance meets in criteria in Article 57 and is identified in accordance with Article 59(1), if both (1) the substance is present in those articles in quantities totalling over 1 tonne per producer or importer per year & (2) the substance is present in those articles above a concentration of 0.1% weight by weight (w/w) are met. The information to be notified shall include (a) identity and contact details of the producer or importer, (b) the registration numbers, (c) the identity of the substance and (d) the classification of the substance, (e) a brief description of the use of the substance and (f) the tonnage range of the substance.
3. In accordance of Article 33 of Regulation (EC) No. 1907/2006 (REACH regulation) – Duty to communicate information on substances in articles, any supplier of an article containing a substance meeting the criteria in Article 57 and identified in accordance with Article 59(1) in concentration above 0.1% weight by weight (w/w) shall provide the recipient of the article with sufficient information, available to the supplier, to allow safe use of the article including, as a minimum, the name of that substance. On request by a consumer the relevant information shall be provided by any supplier of an article free of charge, within 45 days of receipt of the request.

END