



**BUREAU
VERITAS**

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DATE : June 17, 2019
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Sample Description Assigned by Laboratory:

Test Item	Description
1	Black liquid

Note:

g = gram(s)	% = percentage
mcg = microgram(s)	1 mg/kg = 0.0001%
mg/kg = milligram per kilogram	"<" = less than
mg/L = milligram per litre	">" = Greater than
g/kg = gram(s) per kilogram	Req. = Requirement
MDL = Method Detection Limit	"-" = Not Regulated
ND = Not Detected (< MDL)	NA = Not applicable
EX = Exempted	

Photo of the Submitted Sample





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TEST RESULT

Aromatic Amines Content from Azo Colorants

Test Method I : EN ISO 14362-1:2017

Test Method II : ISO 17234-1: 2015

Test Method III : EN ISO 14362-3: 2017

Quantification analysis by GC-MS and confirmation by LC-DAD.

Tested Item(s)	Test Method	Result		
		Detected Analyte(s)	Concentration	Unit
I	I	ND	ND	mg/kg

Note:

Detection Limit (mg/kg): Each 10

Conc. = Concentration

Remark:

- *Azo colorants that are able to form p-aminoazobenzene, generate aniline and 1,4-phenylenediamine under the condition of test method I. If aniline and/or 1,4-phenylenediamine is not found by test method I, test result for 4-aminoazobenzene (CAS no. 60-09-3) is considered as "Not detected". Otherwise, the test method III will be employed to verify the presence of 4-aminoazobenzene.
- The list of aromatic amines in azo dyestuff is summarized in table of Appendix.

APPENDIX

List of Aromatic Amines in Azo Dyestuff:					
No.	Name of Analytes	CAS-No.	No.	Name of Analytes	CAS-No.
1	4-Aminodiphenyl	92-67-1	13	p-Chloroaniline	106-47-8
2	Benzidine	92-87-5	14	p-Cresidine	120-71-8
3	4-Chloro-o-Toluidine	95-69-2	15	4,4'-Methylene-bis-(2-chloraniline)	101-14-4
4	2-Naphthylamine	91-59-8	16	4,4'-Oxydianiline	101-80-4
5	o-Aminoazotoluene	97-56-3	17	4,4'-Thiodianiline	139-65-1
6	2-Amino-4-nitrotoluene	99-55-8	18	2,4-Toluenediamine	95-80-7
7	2,4-Diaminoanisole	615-05-4	19	o-Toluidine	95-53-4
8	4,4'-Diaminodiphenylmethane	101-77-9	20	2,4,5-Trimethylaniline	137-17-7
9	3,3'-Dichlorobenzidine	91-94-1	21	o-Anisidine	90-04-0
10	3,3'-Dimethoxybenzidine (o-Dianisidine)	119-90-4	22	*p-Aminoazobenzene (4-Amino-azobenzene)	60-09-3
11	3,3'-Dimethylbenzidine (o-Tolidine)	119-93-7	23	2,4-Xylidine	95-68-1
12	3,3'-Dimethyl-4,4'-diaminodiphenylmethane	838-88-0	24	2,6-Xylidine	87-62-7

END