

AUDIT REPORT

MANGO - DETOX PROJECT

Enterprise name:

SUPPLIER 2
SUPPLIER 3
SUPPLIER 4
SUPPLIER 5

Facility name:

Jiangsu Lugang Science & Technology Co, Ltd.

Audit Data: 2 March, 2013

Auditor Equip: **Beatriz Bayo (MANGO)**
Carla Coloma (MANGO)
Alice Cheng (AITEX)
Inma Montes (AITEX)

Report by Inma Montes (AITEX)

 **Jiangsu Lugang Science & Technology Co. Ltd**

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Annex 1:

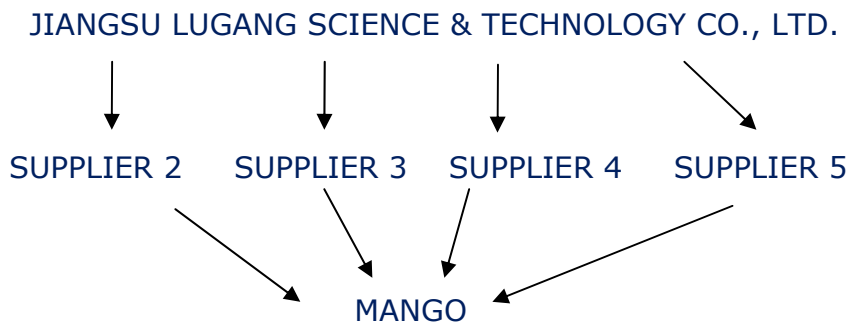
List of analytes (as per IPE Corporate Disclosure Data Form ENG FINAL Q1 0320)

Original Testing Report

1. PURPOSE OF THE REPORT

The purpose of this report is auditing, based on the Standard Oeko-tex® Standard 1000, by checking the use of chemicals products within the production process in the related factory and the release of any harmful chemicals after the wet processes performed.

1.1. Relationship with MANGO



Jiangsu Lugang Science & Technology Co., Ltd. is the raw material supplier facility in the sourcing chain of four of the main suppliers of finished garments for MANGO. Jiangsu Lugang Science & Technology Co., Ltd. provides top dyed / fibre dyed (complete process in the same factory) for the production of knitting garments for the final buyer: MANGO.

2. AUDIT PROCESS

2.1. Audit protocol

The system used in the quality control audit is based on the audit procedure of the Oeko-Tex® Standard 1000, specific certification for textile companies that want to differentiate their good environmental performance and was carried out by the independent third party auditor Aitex (see section 3) accompanied by Mango staff, including the following steps:

- ✓ **Opening meeting:** explaining reason of the audit, explanation of the program, steps for future follow-up, affirmation of the confidentiality.
- ✓ **Documentary review and questionnaire** to be completed by Aitex as per the comments from the responsible staff of the facility and the main responsible person in charge of chemicals/environment area of the company. The questionnaire helps to determine the kind of production process carried out in the company, environment impact points as well as other general information about consumptions, list of

chemicals, external certifications (ISO 14001, Oeko-Tex® Standard 100), third party inspections reports, internal reports of waste water, etc.

- ✓ **Inspection to the facility:** The different areas of production of the company are freely and properly checked to ensure all discharge pathways. Points of greater risk environment impact are identified (chemical room, drainage discharges, pipes, etc). After identifying the points of discharge, the sample is taken *in situ* from all points considering necessary (upstream and if possible, from any further treatment): one sample making up 2000 ml and not in alternative times. Pictures were taken for my records.
- ✓ **Closing meeting:** some remarks and comments after the visit are given and shared with the managing representatives of the company.

Notes: During the whole process, a Chinese interpreter joined us for the correct communication. Samples were properly sealed and identified and sent to the laboratory for the testing.

2.2. Measuring protocol

Jiangsu Lugang Science & Technology dedicates to spinning and fibre dyeing. The main environmental concern in this textile industry is about the amount of water discharged and the chemical load it carries.

To evaluate the environmental impact of waste water a representative sample of the pollutant concentration level was taken at the end of the wet production process which was assessed as the main discharge upstream of any treatment (ie before waste water treatment whether facility own treatment or collective/ publicly owned treatment).

Jiangsu Lugang Science & Technology Co, Ltd.			
Name of sample	Day Time (Day/month/year)/	Sampling point	Volum
020313AR1 020313AR2 020313AR3 020313AR4	02/03/2013 12:00	Discharge pipe after all production process before treatment	500 ml x 4

The samples were always collected by the auditor during the on-site audit. As they were always taken at the same time, there are no alternative results.

The location of the facility where the samples 020313AR1, 020313AR2, 020313AR3 and 020313AR4 were taken is as follows:

Luyan Industry Area,
Tangqiao Town,
Zhangjiagang City, Jiangsu Province,
China

This facility doesn't generate sludge in the waste water treatment plant.

2.3. Audit and laboratory results

The laboratory performing the analyzes of samples taken in companies is:

Intertek Testing Services Ltd., Shanghai
www.intertek.com

For more than 100 years, Intertek has guided clients through the challenging certification process. Offering the broadest range of certification and accreditation marks accepted in markets around the world, Intertek can help clients to succeed in new and existing markets, meet evolving regulatory requirements and win new customers.

Intertek is a leading provider of independent analytical laboratory testing services, from advanced R&D research projects to routine quality tests. The analytical services laboratories are staffed by trained chemists, material scientists, technicians and laboratory management with years of industry knowledge and expertise.

Chemical Analysis - GLP Laboratories

- Structure elucidation, chemical identification, deformulation, reverse engineering
- Determination of impurities and contaminants: By-product profiling and identification, identification of unknown compounds
- Preparation and qualification of reference material
- Analytics in regulated areas: REACH, GLP/GMP, CoAs for registration
- Molecular weight distribution, In-situ reaction monitoring, reaction kinetics, color and white metrics
- Special library services: MS, IR, Raman, NMR
- Open access and express services: NMR, LC-MS, FTIR, GC-MS
- Failure analysis: Foreign particles, deposits, blooming, discoloration

Microscopy and Surface Analysis

- Surface sensitive analysis: Thin film analysis, depth profiling, penetration studies, cleanliness studies
- Surface properties: Topography, roughness, morphology, elasticity
- Particle properties: Size, shape, morphology
- Failure analysis: Elemental microanalysis, cross-section analysis
- Analytical imaging applications: EDX-mapping, STEM, SIMS-mapping, FTIR, Raman, polymorphism, uniformity, distribution, chemometry
- Open access and express services: SEM and AFM

Trace Analysis - GLP/GMP-Laboratories

- Extractables and leachables studies for all types of pharmaceutical container closure systems and in-process materials
- Impurity profiling: APIs and finished drug systems, screenings and failure investigations
- Method development & validation (GMP): QC methods and process validation methods
- Reference material qualification
- Classical trace analysis: PCDD/Fs, PCBs, PAHs, N-Nitrosamines, fluoro-organics, aromatic amines organo tin compounds
- VOCs: Volatile organic compounds, residual solvents & odor problems
- OECD-methods (GLP): Water solubility, Kow- and Koc-value, hydrolysis studies, soil sorption, etc.
- Migration studies according to EU and/or FDA guidelines

2.3.1. Supporting documents

In the audit, the audit team verified that Jiangsu Lugang Science & Technology Co., Ltd. has the following certificates:

<i>Document</i>	<i>Number</i>	<i>Comments</i>
Certificate Oeko-Tex® Standard 100	BEWO 062105	Product Class II (100% total production certificate) Expiry date: 15/03/2013 (in process of renewal)
Environment licence	Yes	Expiry date: 31/12/2012 (in process of renewal)
Quality Management System - ISO 9001:2008	04610Q10410R0M	Expiry date: 26/04/2013
Environmental Management System - ISO 14001:2004	04610E10073R0M	Expiry date: 26/04/2013

In the company, the places where there is a greater risk of environmental impact are:

- Chemicals warehouse, which is equipped for this purpose and in accordance with standards ISO quality and environment certified externally and inventory of MSDS with environment criteria.
- Hazardous waste, which is properly paved and store under cover, with the appropriate retention basins and respecting the incompatibilities between chemicals.
- Wastewater discharge: the company has water treatment, shared with four more companies with biological pools and monthly control of the main parameters. Later, in the Government plant, the final treatment is carried out.

- The company has Oeko-Tex® Standard 100. The OEKO-TEX® Standard 100 is an independent testing and certification system for textile raw materials, intermediate and end products at all stages of production. Examples for items eligible for certification: Raw and dyed/finished yarns, raw and dyed/finished fabrics and knits, ready-made articles (all types of clothing, domestic and household textiles, bed linen, terry cloth items, textile toys and more).
- The company has ISO 14000. This certificate is a family of standards related to environmental management that exists to help organizations to minimize the negative impact of their operations and processes (i.e. cause adverse changes to air, water, or land). That way they comply with applicable laws, regulations and other environmentally oriented requirements to progressively improve.

The substances intended for analysis is listed in Annex 1 (List of Analytes) according to the IPE disclosure data form (v 0320). The original test report is also provided in Annex 1.

The results obtained for samples 020313AR1, 020313AR2, 020313AR3 and 020313AR40 are as follows:

	Concentration of pollutant release (mg/L)	Total pollutant discharge estimation (kg/year)
Total Nickel(Ni)	0,015	3,3
Total Zinc(Zn)	0,097	21,5

Measurement method used for calculating total pollutant Discharge:	Self-monitored data
Source of Pollutant concentration data:	Self-monitored data

Total volume of discharged water during 2012: 221.242 m³/year.

The total pollutant discharge estimation has been calculated with the total waste water discharged during 2012 a year as per documentation collected during the audit.

It is worthy to remind the variability in the process discharges along the year and that this sample was taken at an specific moment. For better interpretation of results, it would be advisable periodical follow-up into the sample flow.

EVALUATION OF RESULTS

These parameters are present mainly in the dyes and pigments chemicals and solvents to be characteristic of certain colors.

Metals can be present in dyes for two reasons. First, metals are used as catalysts during the manufacture of some dyes and can be present as impurities. Second, in some dyes the metal is chelated with the dye molecule, forming an integral structural element.

Dye manufacturers are now putting more effort into reducing the amount of metals present as impurities. This can be done by selection of starting products, removal of heavy metal and substitution of the solvent where the reaction takes place.

Examples of dyes containing bound metals are copper and nickel in phthalocyanine groups, copper in blue copper-azo-complex reactive dyes and chromium in metal-complex dyes used for wool silk and polyamide. The total amount of metallised dye used is decreasing, but there remain domains (certain shades such as greens, certain levels of fastness to light) where phthalocyanine dyes, for example, cannot be easily substituted.

The presence of the metal in these metallised dyes can be regarded as a less relevant problem compared to the presence of free metal impurities. Provided that high exhaustion and fixation levels are achieved and that measures are taken to minimise losses from handling, weighing, drum cleaning, etc., only a little unconsumed dye should end up in the waste water. Moreover, since the metal is an integral part of the dye molecule, which is itself non-biodegradable, there is very little potential for it to become bio-available.

It is also important to take into account that treatment methods such as filtration and adsorption on activated sludge, which remove the dye from the waste water, also reduce nearly proportionally the amount of bound metal in the final effluent. Conversely, other methods such as advanced oxidation, may free the metal.

ADDITIONAL COMMENTS

The main effects on the environment of these compounds are:

Nickel: Environmental Effects

Nickel is a dietary requirement for many organisms, but may be toxic in larger doses. Metallic nickel and some other nickel compounds are teratogenic and carcinogenic to mammals. Nickel concentrations in plants are usually 1 µg/g, and concentrations above 50 µg/g are toxic.

Zinc: Environmental Effects

Zinc was not attributed a water hazard class, because it is not considered a hazard. This however only concerns elementary zinc. Some zinc compounds, such as zinc arsenate and zinc cyanide, may be extremely hazardous. Zinc is a dietary mineral for humans and animals. Still, overdoses may negatively influence human and animal health and over a certain boundary concentration,

zinc may even be toxic. Toxicity is low for humans and animals, but phytotoxicity may not be underestimated.

By comparing the results obtained and the regulations in force in China according to standard GB3838-2002, they do not exceed in any parameter, so the results comply with the legal standard of the region.

AITEX, as the laboratory in charge of monitoring the control of harmful substances on all MANGO goods, can confirm that these substances that may appear during the production process and waste water, are tested on the final product before selling to avoid any danger to human health following the most restrictive standards of all countries where their products are marketed.

2.3.2. RECOMMENDATIONS

To avoid the detection of these compounds in the wastewater is recommended To replace the pigments and dyes on metal base by others more correct environmentally.

2.3.2 Facility sign-off

The responsibility for the discharges data included in this report has been fully recognised and agreed for disclosure by the CEO/ General Manager of the facility with the accompanying additional information (see scan of original declaration below):

Corporate Disclosure Data Form

Enterprise Name (Chinese) : 江苏鹿港科技股份有限公司

Enterprise Name (English) : JIANGSU LUGANG SCIENCE & TECHNOLOGY
CO.,LTD

Facility Name / identity (if enterprise has several facilities): 江苏鹿港科技股份有
限公司

Facility Address: LUYUAN INDUSTRY AREA, TANGQIAO
TOWN, ZHANGJIAGANG CITY, JIANGSU PROVINCE, CHINA

Type of industrial activity (sector, subsector¹): TEXTILE: Dyeing & Spinning

Reporting Year: 2013

Trimester period data applies to²: 1 Jan 2013 – 31 Mar 2013

Responsible person³: Staman Shi

Name (please print): Staman Shi

Title: Sales manager

Phone number: Staman Shi

Date submitted: 2013-04-01

Signature of CEO or General Manager:



Signature:



¹ Eg. textile/apparel, dyeing

² Eg. 1 Jan 2013 - 31 Mar 2013

³ Eg. the person responsible for environmental management

Names + description of documents attached /annexed to filled in data form that corresponds to the audit process proofs.

Audit process proofs include 1. Full measuring/sampling protocol; 2. Original lab sampling report (s) including detection limits; 3. Declaration from third party auditor describing quality controls. Additional documents such as : Facility chemical inventory etc

Other Parameters, relevant pollutant discharge information and environment management status :

e.g. other pollutant concentration data (ETP outlet/discharges and sludge), leaks, accidents etc. that occurred that would explain discharge anomalies or extra auditing process information, progress information reports, actions taken to achieve results etc

We are highly pay attention on this clean production project which is a sustainable development work plan, After 1st time of investigation,

We wI strictly carry out the improved enforcement of standards,we wI ask all of the chemicals suppliers always update the best quality chemicals and MSDS of each item. Wl organize relevant workers to participate in training meeting monthly to improve the relative knowleage.

Every lot of chemical using,we wI make test For the dying stuff in our own house lab 1st as well as the yarn production to External examination organization test before bulk running. After bulk finishing,we wI double test again before shipment to be more save.

Wl review &checking waste water periodically also..

END

3. DECLARATION OF THIRD PARTY



Alcoy, March 2013

To whom it may concern,

Vicente Blanes Julià, as General Manager of the Institution AITEX (Textile Research Institute) declares that:

AITEX is a private non-profit association that encompasses textile and textile-related companies. Its ultimate aim is to make this sector more competitive. To achieve this, the Institute promotes modernisation and the introduction of new and emerging technologies by developing R&D projects and, in general, any initiatives that will contribute to the industrial progress of the sector.

It is registered with the Register of Innovation and Technology Centres, registration number 36, as well as the Research Results Transfer Office (OTRI), registration number 115. It is also a member of the Spanish Federation of Innovation and Technology Centres (FEDIT) and the Region of Valencia's Network of Technology Institutes (REDIT) as well as a number of other national and international organisations.

AITEX has accredited the following standards for their organisation:

- It is a recognized testing laboratory that works according to a standardized and organized management system to ensure the uniformity of their work to their customers. AITEX laboratory services are accredited by ENAC according to the norm UNE - EN ISO IEC 17025:2005 ERRATUM:2006 "General requirements for the competence of laboratories testing and calibration" and document CGA - ENAC - LEC "general criteria for the accreditation of laboratories for testing and calibration according to standard UNE EN ISO IEC 17025".
- Also during 2012 the certification of the quality system of AITEX according to the reference standard UNE - EN - ISO 9001:2008 "quality management systems, requirements by AENOR has been remained.

In Spain, only AITEX is the institute authorized for auditing and certificate Oeko-Tex® Standard 100 (for product) and Oeko-Tex® Standard 1000 (for companies), under the supervision of the Secretariat, International Association for Research and Testing in the Field of Textile Ecology (OEKO-TEX®) in Zürich.

The auditors involved in the project MANGO - DETOX work with complete impartial criteria with audited companies.

The staffs involved have the appropriate training to be an evaluation body focused in environmental objectives.

Sincerely,

 Vicente Blanes Julià
 General Manager AITEX

Central: Plaza Emilio Sala, 1 - E-03801 ALCOY (Alicante) SPAIN - Tel.: +34 96 554 22 00 - Fax: +34 96 554 34 94
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Los ensayos acreditados por ENAC se encuentran disponibles en el departamento de calidad del Instituto
 Asociación de Investigación de la Industria Textil - C.I.F.: G03182870

ANNEX 1

List of analytes (as per IPE Corporate Disclosure Data Form ENG FINAL Q1 0320)

SUBSTANCE GROUP/COMMON NAME	CAS number	COMMENTS
<u>Heavy Metals</u>		
Total Hexavalent chromium	NA	SEE LAB REPORT ATTACHED
Mercury and its Compounds or Total Mercury	NA	SEE LAB REPORT ATTACHED
Lead and its Compounds or Total Lead	NA	SEE LAB REPORT ATTACHED
Cadmium and its Compounds or Total Cadmium	NA	SEE LAB REPORT ATTACHED
Total Chromium	NA	SEE LAB REPORT ATTACHED
Total Zinc	NA	SEE LAB REPORT ATTACHED
Total Manganese	NA	* NOT TESTED (Missing substance as it is not regulated in China for textile wastewater.)
Total Cyanide	NA	* NOT TESTED (Missing substance as it is not regulated in China for textile wastewater.)
Nickel	NA	SEE LAB REPORT ATTACHED
Total Copper	NA	SEE LAB REPORT ATTACHED
Other heavy metals ¹	NA	TOTAL ARSENIC (SEE ORIGINAL LAB REPORT)
<u>Alkylphenols</u>		
NP / 4-NP (branched)	25154-52-3 ² ALTERNATIVE 11066-49-3 ³ Or 90481-04-2 ⁴	SEE LAB REPORT ATTACHED
NPE	commonly used CAS number is 9016-45-9 ⁵	NPEO ⁽¹⁺²⁾ , NPEO ⁽³⁻¹⁸⁾ (SEE ORIGINAL LAB REPORT)
4-t-OP	140-66-9	SEE LAB REPORT ATTACHED (4-t-OP = OP)

¹ to be filled in by facility for any other relevant heavy metals that are listed

² Commonly used, cite from OSPAR

³ From Information from the Existing Substances Regulation: <http://echa.europa.eu/web/guest/information-on-chemicals/information-from-existing-substances-regulation>

⁴ From EU risk assessment: <http://echa.europa.eu/web/guest/information-on-chemicals/information-from-existing-substances-regulation>

⁵ From OSPAR

4-t-OPE	26636-32-8	* NOT TESTED. MISSED
Other alkylphenols ⁶	NA	OPEO ₍₃₋₁₆₎ (SEE ORIGINAL LAB REPORT)
<u>Phthalates</u>		
DEHP,	117-81-7	SEE LAB REPORT ATTACHED
DBP,	84-74-2	SEE LAB REPORT ATTACHED
BBP	85-68-7	SEE LAB REPORT ATTACHED
DIBP,	84-69-5	SEE LAB REPORT ATTACHED
DNOP	117-84-0	SEE LAB REPORT ATTACHED
DIDP	26761-40-0 and 68515-49-1	SEE LAB REPORT ATTACHED
DINP	28553-12-0 and 68515-48-0	SEE LAB REPORT ATTACHED
Other phthalates ⁷		DnHP (SEE LAB REPORT ATTACHED)
<u>Brominated and Chlorinated flame retardants</u>		
HBCDD ,	25637-99-4, 3194-55-6 (134237-50-6) (134237-51-7) (134237-52-8)	SEE LAB REPORT ATTACHED
Tris (2,3-dibromopropyl) phosphate	126-72-7	* NOT TESTED. MISSED
Tris(2-chloroethyl)phosphate (TCEP)	115-96-8	* NOT TESTED. MISSED
Tetra BDE	40088-47-9	SEE LAB REPORT ATTACHED
PentaBDE	32534-81-9	SEE LAB REPORT ATTACHED
HexaBDE,	36483-60-0	SEE LAB REPORT ATTACHED
HeptaBDE,	68928-80-3	* NOT TESTED. MISSED
octaBDE,	32536-52-0	SEE LAB REPORT ATTACHED
NonaBDE	63936-56-1	* NOT TESTED. MISSED
decaBDE,	1163-19-5	SEE LAB REPORT ATTACHED

⁶ to be filled in by facility for any other relevant alkylphenols that are identified eg on Material safety data sheets

⁷ to be filled in by facility for any other relevant phthalates that are identified eg on Material safety data sheets

Other brominated or chlorinated Flame retardants ⁸	59536-65-1 / 79-94-7	PBBs and TBBPA (SEE LAB REPORT ATTACHED)
Azodyes⁹		TESTED: 22 AMINES as per REACH Regulation.
		* NOT TESTED: 2,4-Xylidine / 2,6-Xylidine. From now on, Chinese GB18041 standard will be follow to include all 24 amines.
Organotin Compounds¹⁰		
Tributyltin compounds(TBT)	56573-85-4	SEE LAB REPORT ATTACHED
Dibutyl tin compounds(DBT)	1002-53-5	SEE LAB REPORT ATTACHED
Mono butyltin compounds	78763-54-9	MBT (SEE LAB REPORT ATTACHED)
Octyl tin compounds (DOT)	15231-44-4	SEE LAB REPORT ATTACHED
Phenyltin compounds	668-34-8	TPT (SEE LAB REPORT ATTACHED)
Other organo tins ¹¹		TPhT (Triphenyltin), MOT (Monooctyltin), TphT (Diphenyltin), TeBT (Tetrabutyltin), TcYT (Tricyclohexyltin), TeET (Tetraethyltin) (SEE ORIGINAL LAB REPORT)
Perfluorinated Chemicals		
PFOS	307-35-7; ALTERNATIVE 1763-23-1.	SEE LAB REPORT ATTACHED
PFOA	335-67-1	SEE LAB REPORT ATTACHED
Other C8 PFCs ¹²	NA	NA
PFHXS	432-50-7	* NOT TESTED
PFHXA	307-24-4	* NOT TESTED
Other C6 PFCs ¹³	NA	NA
PFBS	375-73-5	* NOT TESTED. MISSED
PFBA	375-22-4	* NOT TESTED. MISSED
Other C4 PFCs ¹⁴	NA	NA

⁸ to be filled in by facility for any other relevant brominated or chlorinated flame retardants in this group that are identified eg on Material safety data sheets

⁹ Azodyes mentioned here refer to the 24 compounds banned by the National General Safety technical Code for textile products. (GB 18401-2010)

¹⁰ Part of the CAS code of Organotin Compounds are quoted from American Apparel & Footwear Association – Restriction Substance List (AAFA RSL, Oct, 2012).

¹¹ to be filled in by facility for any other relevant organotins in this group that are identified eg on Material safety data sheets

¹² to be filled in by facility for any other C8 PFCs in this group that are identified eg on Material safety data sheets

¹³ to be filled in by facility for any other C6 PFCs in this group that are identified eg on Material safety data sheets

¹⁴ to be filled in by facility for any other C4 PFCs in this group that are identified eg on Material safety data sheets

Other PFCs ¹⁵		N-Methyl-Perfluorooctanesulfonamide(N-ME-FOSA), N-Ethyl-Perfluorooctanesulfonamide(N-Et-FOSA), N-Methyl-Perfluorooctanesulfonamidoethanol(N-Et-FOSE alcohol), N-Ethyl-Perfluorooctanesulfonamidoethanol(N-Me-FOSE alcohol), Perfluorooctane Sulfonamide(PFOSA) (SEE ORIGINAL LAB REPORT)
Chlorinated Chemicals:		
Chlorobenzenes, chlorinated solvents, chlorophenols and Short chained chlorinated parafins		
Chlorobenzenes		
monochlorobenzene	108-90-7	* NOT TESTED. MISSED
dichlorobenzene	1,2-Dichlorobenzene 95-50-1 1,3-Dichlorobenzene 541-73-1 1,4-Dichlorobenzene 106-46-7	SEE LAB REPORT ATTACHED
trichlorobenzene	1,2,3-trichlorobenzene 87-61-6 1,2,4-trichlorobenzene 120-82-1 1,3,5-trichlorobenzene 108-70-3	SEE LAB REPORT ATTACHED
tetrachlorobenzene	1,2,3,4-Tetrachlorobenzene 634-66-2 1,2,3,5-Tetrachlorobenzene 634-90-2; 1,2,4,5-Tetrachlorobenzene : 95-94-3	* NOT TESTED. MISSED
pentachlorobenzene	608-93-5	* NOT TESTED. MISSED.
hexachlorobenzene	118-74-1	* NOT TESTED. MISSED.
Chlorinated solvents (chlorinated alkanes and alkenes)		
Dichloromethane	75-09-2	* NOT TESTED. MISSED
Trichloromethane (chloroform)	67-66-3	SEE LAB REPORT ATTACHED
Tetrachloromethane	56-23-5	* NOT TESTED. MISSED
1,1,2-Trichloroethane	79-00-5	SEE LAB REPORT ATTACHED
1,1-dichloroethane	75-35-4	* NOT TESTED. MISSED
1,2-dichloroethane (EDC)	107-06-2	* NOT TESTED. MISSED
Trichloroethylene (TCE)	79-01-6.	SEE LAB REPORT ATTACHED
Perchloroethylene (PERC); also known as tetrachloroethylene	127-18-4	SEE LAB REPORT ATTACHED

¹⁵ to be filled in by facility for any other PFCs in this group that are identified eg on Material safety data sheets

Chlorophenols		
Penta chlorophenols (PCP)	87-86-5	SEE LAB REPORT ATTACHED
Tetrachlorophenols (PCP)	25167-83-3	* NOT TESTED. MISSED
Tri chlorophenols (PCP)	2,4,6-Trichlorophenol; 88-06-2	SEE LAB REPORT ATTACHED
	2,4,5-Trichlorophenol; 95-95-4	* NOT TESTED. MISSED
	2,3,4-Trichlorophenol; 15950-66-0	* NOT TESTED. MISSED
	2,3,5-Trichlorophenol; 933-78-8	* NOT TESTED. MISSED
	3,4,5-Trichlorophenol; 609-19-8	* NOT TESTED. MISSED
Di chlorophenol (PCP)	2,4- dichlorophenol 120-83-2	SEE LAB REPORT ATTACHED
	2,6-Dichlorophenol 87-65-0	* NOT TESTED. MISSED
	3,5- dichlorophenol. 591-35-5	* NOT TESTED. MISSED
	2,3-Dichlorophenol; 576-24-9	* NOT TESTED. MISSED
	3,4-Dichlorophenol; 95-77-2	* NOT TESTED. MISSED
	2,5-Dichlorophenol; 583-78-8	SEE LAB REPORT ATTACHED
Mono chlorophenol (PCP)	95-57-8 2-chlorophenol;	* NOT TESTED. MISSED
	108-43-0 3-chlorophenol;	* NOT TESTED. MISSED
	106-48-9 4-chlorophenol	* NOT TESTED. MISSED
Other chlorobenzenes, Chlorinated solvents and chlorophenols ¹⁶		1,1,1,2-Tetrachloroethane, 1,1,1-trichloroethane, Carbon Tetrachloride, Pentachloroethane, 1,1-Dichloroethylene (SEE ORIGINAL LAB REPORT)
Short chained chlorinated parafins		
SCCP chloro alkanes, C10-13	85535-84-8	SEE LAB REPORT ATTACHED
Other hazardous chemicals ¹⁷		

(*) All the substances indicated as *NOT TESTED/MISSED, Mango will progressively require testing in subsequent sampling.

REMARK: All detection limits of all analytes and in particular the APEOs, will be revised in line with best technically available detection levels.

Original Testing Report(s) (PDF(s) attached)

¹⁶ to be filled in by facility for any other relevant substances in this group that are identified eg on Material safety data sheets

¹⁷ to be filled in by facility for any other relevant chemical groups that are identified eg on Material safety data sheets



Test Report

Number: SHAH0036803502S1

Applicant: MANGO PUNTO FA, S.L.
C/ MERCADERS 9-11 P. I. RIERA DE CALDES PALAU-SOLITA
I PLEGAMANS, 08184 BARCELONA SPAIN
Attn: ALICE

Date: MAR 18, 2013

THIS IS TO SUPERSEDE REPORT
NO. SHAH0036803502 DATED MAR.
13, 2013

Sample Description:

**One(1) Submitted Sample Said To Be :
Transparent Liquid (020313AR1 & 020313AR2 & 020313AR3 & 020313AR4).**

Tests Conducted:

As requested by the applicant, for details refer to attached page(s).

To be continued

Authorized By:
For Intertek Testing Services Ltd., Shanghai

Jacob Lin
General Manager



Tests Conducted

1 Nonylphenol (NP), Octylphenol (OP), Nonylphenol Ethoxylates(NPEO) and Octylphenol Ethoxylates(OPEO)

By Liquid Chromatography – Mass Spectrometry (LC-MS) analysis.

<u>Compound</u>	<u>Result (µg/L)</u>
OP	<100
NP	<100
NPEO (1+2)	<100
NPEO (3-18)	<100
NPEO (1+2)	<100
OPEO (3-16)	<100

Remark: Detection limit =100µg/L

2 Volatile organic compounds content

By Headspace Gas Chromatography Mass Spectrometric (HS - GC/MS) analysis.

<u>Compound</u>	<u>Result (mg/L)</u>
Trichloroethylene	<5
Tetrachloroethylene	<5
1,1,1-trichloroethane	<5
Carbon Tetrachloride	<5
1,1,1,2-Tetrachloroethane	<5
1,1,2,2-Tetrachloroethane	<5
1,1,2-Trichloroethane	<5
Pentachloroethane	<5
Trichloromethane	<5
1,1-dichloroethylene	<5

Remark: Detection limit = 5mg/L

To be continued

Tests Conducted

3 Detection Of Amines Derived From Azocolourants and Azodyes

By Gas Chromatographic - Mass Spectrometric (GC-MS) And High Performance Liquid Chromatographic (HPLC) Analysis.

	<u>Forbidden</u>	<u>Cas No.</u>	<u>Result(µg/L)</u>
1.	4-Aminodiphenyl	92-67-1	<100
2.	Benzidine	92-87-5	<100
3.	4-Chloro-o-Toluidine	95-69-2	<100
4.	2-Naphthylamine	91-59-8	<100
5.	o-Aminoazotoluene	97-56-3	<100
6.	2-Amino-4-Nitrotoluene	99-55-8	<100
7.	p-Chloroaniline	106-47-8	<100
8.	2,4-Diaminoanisole	615-05-4	<100
9.	4,4'-Diaminodiphenylmethane	101-77-9	<100
10.	3,3'-Dichlorobenzidine	91-94-1	<100
11.	3,3'-Dimethoxybenzidine	119-90-4	<100
12.	3,3'-Dimethylbenzidine	119-93-7	<100
13.	3,3'-Dimethyl-4,4'diaminodiphenylmethane	838-88-0	<100
14.	p-Cresidine	120-71-8	<100
15.	4,4'-Methylene-Bis(2-Chloroaniline)	101-14-4	<100
16.	4,4'-Oxydianiline	101-80-4	<100
17.	4,4'-Thiodianiline	139-65-1	<100
18.	o-Toluidine	95-53-4	<100
19.	2,4-Toluylenediamine	95-80-7	<100
20.	2,4,5-Trimethylaniline	137-17-7	<100
21.	o-Anisidine	90-04-0	<100
22.	p-Aminoazobenzene	60-09-3	<100

Remark: Detection limit = 100µg/L

To be continued



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Tests Conducted

4 Total (heavy metals) Content

As per client's request, acid digestion method was used and total (heavy metal) contents were determined by Inductively Coupled Argon Plasma Mass Spectrometry.

<u>Tested element(s)</u>	<u>Result (mg/L)</u>
Total Cadmium(Cd)	<0.005
Total Arsenic(As)	<0.025
Total Lead(Pb)	<0.025
Total Chromium(Cr)	<0.025
Total Mercury(Hg)	<0.0002
Total Copper(Cu)	<0.025
Total Nickel(Ni)	0.015
Total Zinc(Zn)	0.097
Total hexavalent chromium(CrVI)	<0.005

5 Phthalate content test

By toluene extraction and by Gas Chromatography-Mass Spectrometry (GC-MS) analysis.

<u>Tested compound</u>	<u>Result (µg/L)</u>
Di-butyl phthalate (DBP)	<50
Di(2-ethyl hexyl) phthalate(DEHP)	<50
Benzyl butyl phthalate (BBP)	<50
Di-iso-nonyl phthalate (DINP)	<50
Di-n-octyl phthalate (DNOP)	<50
Di-iso-decyl phthalate (DIDP)	<50
Di-n-hexyl phthalate (DnHP)	<50
Di-iso-butyl phthalate (DIBP)	<50

Remark: Detection limit = 50µg/L

To be continued

Tests Conducted

6 Chlorophenols content test

With reference to ISO 17070: 2006.

<u>Tested compound</u>	<u>Result ((µg/L)</u>
2,4- & 2,5-Dichlorophenol,	<10
2,4,6-Trichlorophenol	<10
Pentachlorophenol	<10

Remark: Detection limit = 10µg/L

7 Organic Tin compounds content

With reference to DIN EN17353 By Gas Chromatography-Mass Spectrometry (GC-MS) analysis.

<u>Tested compound</u>	<u>Result (µg/L)</u>
MBT(Monobutyltin)	<5
DBT(Dibutyltin)	<5
TBT(Tributyltin)	<5
TPhT(Triphenyltin)	<5
DOT(Dioctyltin)	<5
MOT(Monooctyltin)	<5
TPhT(Diphenyltin)	<5
TeBT(Tetrabutyltin)	<5
TcYT(Tricyclohexyltin)	<5
TPT(Tripropyltin)	<5
TeET(Tetraethyltin)	<5

Remark: Detection limit = 5µg/L

To be continued

Tests Conducted

8 Flame retardants

By toluene extraction, followed by Liquid Chromatography - Mass Spectrometry (LC-MS) and Gas Chromatography - Mass Spectrometry (GC-MS) analysis.

<u>Compound</u>	<u>Result (µg/L)</u>
PBB: Polybromobiphenyls	<100
TetraPBDE: Tetrabromodiphenyl Ether	<100
PentaPBDE: Pentabromodiphenyl Ether	<100
HexaPBDE: Hexabromodiphenyl Ether	<100
OctaPBDE: Octabromodiphenyl Ether	<100
DecaPBDE: Decabromodiphenyl Ether	<100
HBCDD: Hexabromocyclododecane	<100
TBBPA: Tetrabromobisphenol A	<100

Remark: Detection limit = 100µg/L

9 Perfluorooctane Sulfonates (PFOS) And Perfluorooctanoic Acid (PFOA)Content

By Liquid Chromatography-Mass Spectrometry (LC-MS) analysis.

<u>Compound</u>	<u>Result (µg/L)</u>
Perfluorooctane sulfonates(PFOS)	<0.5
Perfluorooctanoic acid(PFOA)	<0.5
N-Methyl-Perfluorooctanesulfonamide(N-ME-FOSA)	<0.5
N-Ethyl-Perfluorooctanesulfonamide(N-Et-FOSA)	<0.5
N-Methyl-Perfluorooctanesulfonamidoethanol(N-Et-FOSE alcohol)	<0.5
N-Ethyl-Perfluorooctanesulfonamidoethanol	<0.5
Perfluorooctane sulfonamide(PFOSA)	<0.5

Remark: Detection limit=0.5µg/L

To be continued



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Tests Conducted

10 Chlorinated paraffin (C10 -C13)

By hexane extraction and Gas Chromatography analysis using Mass Spectrometry or Electron Capture Detector.

Result (µg/L): < 1000

Remark: Detection limit = 1000 µg/L

11 Chlorinated benzenes and toluenes

By Liquid-liquid extraction with dichloromethane and gas chromatographic analysis using mass spectrometric.

<u>Compound</u>	<u>Result(µg/L)</u>
1,4-Dichlorobenzene	<10
Dichlorobenzene	<10
trichlorobenzenes	<10

Remark: Detection limit = 10 µg/L

Date sample received: MAR. 04, 2013

Testing period: MAR. 04, 2013 To MAR. 12, 2013

End of report

This report is made solely on the basis of your instructions and/or information and materials supplied by you. It is not intended to be a recommendation for any particular course of action. Intertek does not accept a duty of care or any other responsibility to any person other than the Client in respect of this report and only accepts liability to the Client insofar as is expressly contained in the terms and conditions governing Intertek's provision of services to you. Intertek makes no warranties or representations either express or implied with respect to this report save as provided for in those terms and conditions. We have aimed to conduct the Review on a diligent and careful basis and we do not accept any liability to you for any loss arising out of or in connection with this report, in contract, tort, by statute or otherwise, except in the event of our gross negligence or wilful misconduct.



To: ALICE
Attention: MANGO PUNTO FA, S.L.

Date: MAR 18, 2013

Re: Report Revision Notification

Intertek Testing Services Report Number SHAH0036803502 Dated: MAR. 13, 2013.

Please be informed that all the content recorded in the above captioned report will be void. This captioned report is now superseded by a revised Intertek Testing Services Report Number SHAH0036803502S1.

Please return the original captioned report to us immediately.

Thank you for your attention.

Authorized By:
For Intertek Testing Services Ltd., Shanghai

Jacob Lin
General Manager



Intertek Testing Services Ltd., Shanghai

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