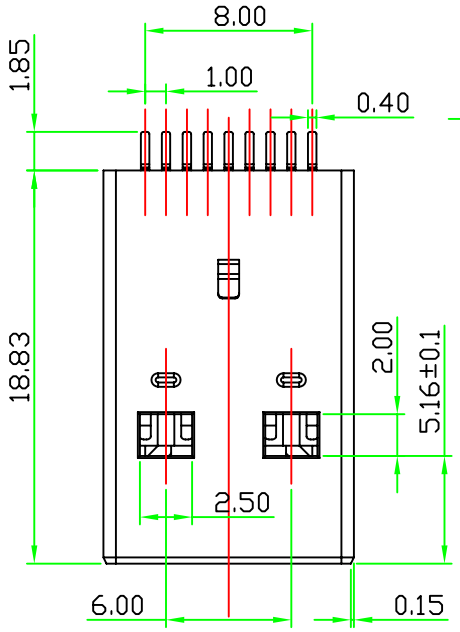
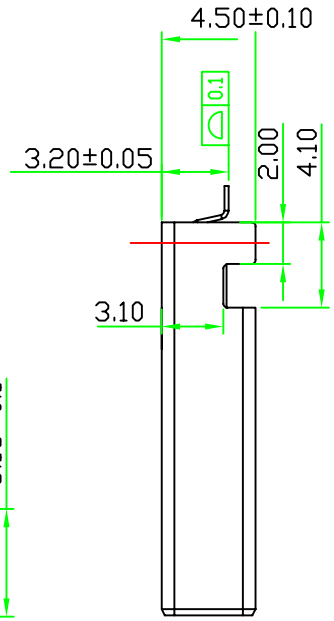
MATERIALS

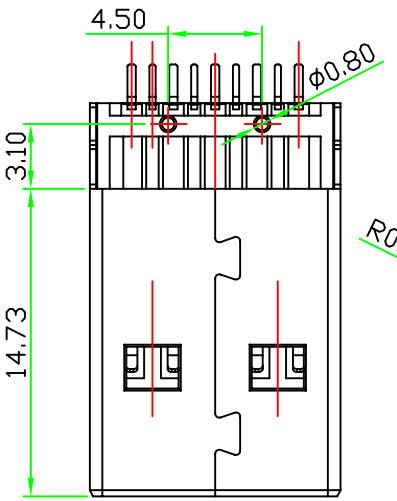
HOUSING: HI-TEMP PLASTIC (UL 94V-0)
SHELL: SPCC, NICKEL PLATING
TERMINAL: COPPER ALLOY, GOLD PLATED ON CONTACT AREA
TIN PLATING ON SOLDER TAIL

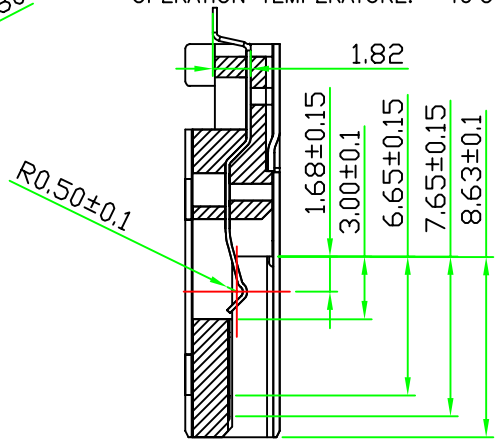
SPECIFICATION

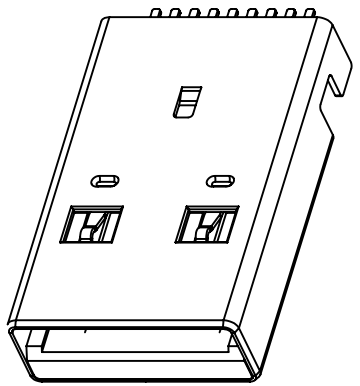
CURRENT RATING: 1.5 AMP MAX
DIELECTRIC WITHSTANDING: 500V AC FOR ONE MINUTE
CONTACT RESISTANCE: 30m OHMS MAX
INSULATION RESISTANCE: 1000M OHMS MIN AT DC 500V
OPERATION TEMPERATURE: -40°C~+85°C

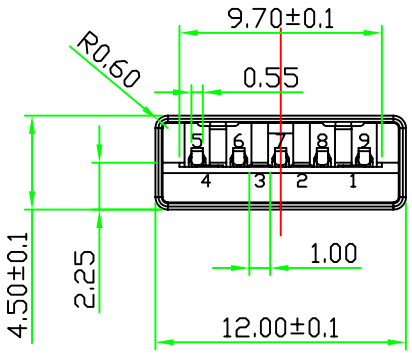


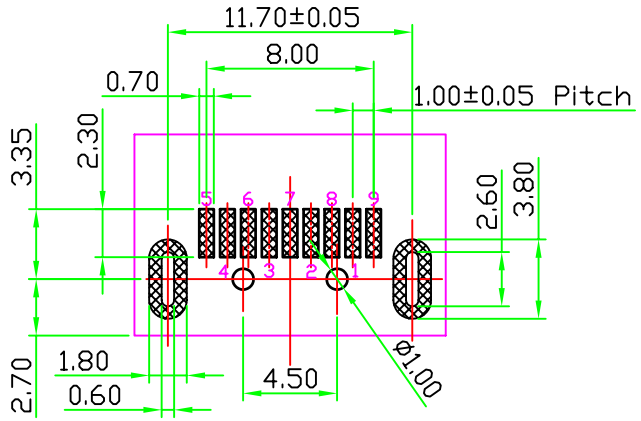












RECOMMENDED PCB LAYOUT

PART NUMBER

22PEH - 0 9 * T - 2 1 9 L

- SERIES
- NO. OF POS.
- CONTACT PLATED OPTION
  - 1: GOLD FLASH
  - 2: 5u" GOLD
  - 3: 10u" GOLD
  - 4: 15u" GOLD
  - 6: 30u" GOLD
- TIN PLATING ON SOLDER TAIL
- TRAY PACKAGE
- LEAD FREE

REV.	DESCRIPTION	DATE
A	RELEASE	2012.8.6

淮洋有限公司 HUAI YANG CO.,LTD.
TEL : 886-2-8261-0858 FAX : 886- 2-8261-8855
www.hy1688.com.tw 236新北市土城區中央路二段191號10樓之5

LINEAR: .X±0.30 .XX±0.20 .XXX±0.10
ANGLES: ±3°

APPROVALS
DRAWN: Ron
CHECKED: Eric
APPROVED: James

10171

SERIES: USB CONNECTOR SERIES

TITLE: USB 3.0 A TYPE, BOARD CUT, SMY, METAL SHIELD, MALE, H=3.2MM

SIZE:	VERSION:	DWG NO.
A4	A	22PE-010

SCALE: NONE UNIT: mm SHEET: 1 OF 1

淮洋有限公司 HUAI YANG CO.,LTD.
TEL：886-2-8261-0858　FAX：886- 2-8261-8855
www.hy1688.com.tw 236新北市土城區中央路二段191號10樓之5

1. Scope

This specification is used to specify the products of **HUAI YANG CO.,LTD.**, It cover the requirements for products performance, test methods and quality assurance of **USB 3.0 Connectors**

2. Quality Information

2-1. Sample in test shall be complied with drawing and this specification.
2-2. If no else packaged specification for customer, the packaged shall be use UNITED VANTAGE specification

3. Design and Construction

Product shall be of the design, construction and physical dimensions specified on the applicable product drawing

4. Material of Components

4-1. Insulator: Hi-Temp. Plastic, UL94-V0, Blue (Pantone 300C)
4-2. Metal shield: Copper alloy or stainless steel, nickel or tin plated
4-3. Terminal: Copper alloy, gold plating over nickel, gold or tin plated on solder tail

5. Ratings

5-1. Current rating: 1.5 Amp
5-3. Operating Temperature: -30°C ~ +85°C

6. Test Condition and Procedure

6-1. Electrical performance

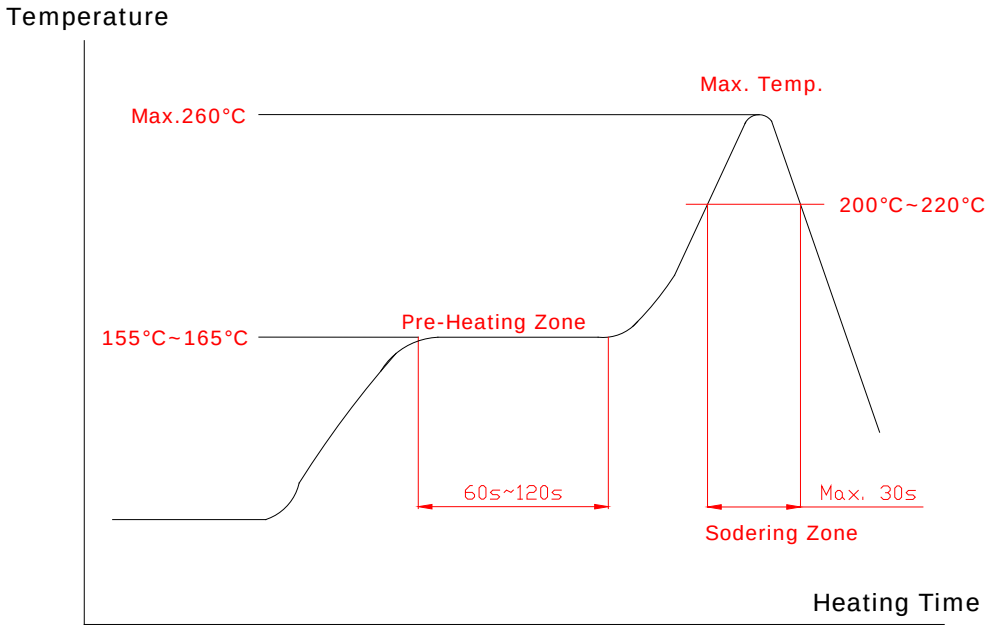
NO.	Test Item	Specification	Test Condition
6-1-1	Dielectric Withstanding Voltage	Test between center contact and outer shell for one minute per EIA364-20	500V AC(r.m.s) for one minute there shell be no breakdown, no flashover, no sparkover, no excess leakage
6-1-2	Insulation Resistance	Test between center contact and outer shell of unmated samples for one minute per EIA364-21	1000MΩ min. at 500V DC
6-1-3	Contact Resistance	Measured between plug solder tails and receptacle solder tails per EIA364-23	Contact resistance shell not exceed 30mΩ max.

6-2. Mechanical performance

NO.	Test Item	Specification	Test Condition
6-2-1	Mating Force	Measure force necessary to mate gauge to samples using free floating fixtures at maximum rate of 25.4mm per minute per EIA364-13A	3.57 Kg Max
6-2-2	Unmating Force	Measure force necessary to mate gauge to samples using free floating fixtures at maximum rate of 25.4mm per minute per EIA364-13A	1.02 Kg Min
6-2-3	Durability	Mate connectors up to 1500 cycles at a maximum rate of 300 cycles per hour prior to environmental test	No physical damage to the connector After test contact resistance shell not exceed 60mΩ max.

6-3. Environmental Performance

NO.	Test Item	Specification	Test Condition
6-3-1	Humidity	There shall be no any excessive corrosion on the every part of connector Temperature: 40±2°C Humidity: 90~95%RH Test time: 96hours per EIA364-31A	No physical damage to the connector After test contact resistance shell not exceed 60mΩ max, there shell be no breakdown
6-3-2	High temperature life	Temperature: 85±2°C Test time: 96hours per EIA364-31A	No physical damage to the connector After test contact resistance shell not exceed 60mΩ max.
6-3-4	Cold resistance	Temperature: -25±2°C Test time: 96hours per EIA364-31A	No physical damage to the connector After test contact resistance shell not exceed 60mΩ max.
6-3-5	Thermal Shock	Temperature: -55 ~ 85°C Cycles: 5 cycles Exposure time at temp. extremes: 30 minutes	No physical damage to the connector After test contact resistance shell not exceed 60mΩ max.
6-3-6	Solderability	The termination should be 95% covered with new continuous solder coating Solder temperature: 245±5°C Test time: 3±0.5 seconds per EIA364-26A	No physical damage to the connector

NO.	Test Item	Specification	Test Condition
6-3-5	Resistance to IR reflow heat	When exposed to the following re-flow soldering condition, there shell be no any excessive thermal damage on the every part of connector.	No physical damage to the connector
			

Product Information

DuPont™ Zenite® LCP

Liquid crystal polymer resin

PRELIMINARY DATA

Zenite® 6130LX BK010 & WT010

30% Glass Reinforced LCP Resin

Zenite® 6130LX is a 30% glass reinforced LCP resin. It is well suited for use in the automotive, electrical/electronic, telecommunications and aerospace industries.

Property	Test Method	Units	Value
Mechanical			
Stress at Break	ISO 527-1/-2	MPa	146
Strain at Break	ISO 527-1/-2	%	2.1
Tensile Modulus	ISO 527-1/-2	MPa	14860
Flexural Strength	ISO 178	MPa	224
Flexural Modulus	ISO 178	MPa	12440
Notched Charpy Impact	ISO 179/1eA	kJ/m^2	18.5
Thermal			
Deflection Temperature 1.80MPa	ISO 75-1/-2	°C	280
Other			
Density	ISO 1183	Kg/m^3 (g/cm^3)	1660 (1.66)
Molding Shrinkage	ISO 294-4	%	
Normal			0.60
Parallel			0.12
Flammability			
UL 94 Rating at Min. Thickness	UL94		V-0
UL 94 Min. Thickness Tested	UL94	mm	
Black			0.75
White			1.5
Processing			
Melt Temperature Range		°C	350-370
Mold Temperature Range		°C	30-95

Contact DuPont for Material Safety Data Sheet, general guides and/or additional information about ventilation, handling, purging, drying, etc.
Mechanical properties measured at 23°C (73°F) unless otherwise stated.
Mechanical properties measured at 4.0mm unless otherwise stated.
Mold shrinkage measured at 2.0mm

During molding, use protective equipment and clothing. Skin contact with molten Zenite® resins can cause severe burns. Be particularly alert during purging.

The above data are preliminary and are subject to change as additional data are developed on subsequent lots.

DUPONT

The miracles of science®

The MSDS format adheres to the standards and regulatory requirements of the United States and may not meet regulatory requirements in other countries.

"ZENITE" POLYMER ALL IN SYNONYM LIST LCP012
LCP012 Revised 12-MAR-2004

CHEMICAL PRODUCT/COMPANY IDENTIFICATION

Material Identification

"ZENITE" is a registered trademark of DuPont.

Tradenames and Synonyms

"ZENITE" 6115L BK010, 6115L WT010;
"ZENITE" 6130 BK010, 6130 NC010, 6130 WT010;
"ZENITE" 6130HL BK010, 6130HL WT010;
"ZENITE" 6130L BK010, 6130L BK010T, 6130L BK014,
"ZENITE" 6130L BLB014,
"ZENITE" 6130L GY015
"ZENITE" 6130L GYB013, 6130L GYB014,
"ZENITE" 6130L NC010, 6130L WT010, 6130L WTB012,
"ZENITE" 6130LX BK010, 6130LX NC010, 6130LX WT010
"ZENITE" 6140L BK010, 6140L BK020, 6140L WT010, #
"ZENITE" 6240L BK010, 6240L WT010,
"ZENITE" 6330 BK010, 6330 NC010,
"ZENITE" 6330L BK010,
"ZENITE" ZE6005 BK010, ZE6005 WT010,
"ZENITE" ZE16103 BK010, ZE16103 WT010,

Company Identification

MANUFACTURER/DISTRIBUTOR
DuPont Engineering Polymers
1007 Market Street
Wilmington,DE 19898

PHONE NUMBERS
Product Information : 1-(800)-441-7515
Transport Emergency : 1-(800)-424-9300
Medical Emergency : 1-(800)-441-3637

COMPOSITION/INFORMATION ON INGREDIENTS

Components

Material	CAS Number	%
AROMATIC THERMOPLASTIC POLYESTER		>40
FIBERGLASS		0-50
Talc, Containing No Asbestos Fibers	14807-96-6	0-50
GRAPHITE	7782-42-5	0-50
PIGMENTS		0-20
CARBON BLACK	1333-86-4	0-20
TITANIUM DIOXIDE	13463-67-7	0-9

(COMPOSITION/INFORMATION ON INGREDIENTS - Continued)

Components (Remarks)

Additives in this product do not present a respiration hazard unless the product is ground to a powder of respirable size and the dust is inhaled. All dusts are potentially injurious to the respiratory tract if respirable particles are generated and inhaled in sufficiently high concentrations. Good industrial hygiene practices, as with all dusts, should include precautions to prevent inhalation of respirable particles.

Unique Label Statements

Read the "Molding Guide for ’Zenite’ Liquid Crystal Polymers" before using these products.

HAZARDS IDENTIFICATION

Potential Health Effects

FIBERGLASS

The mechanical action of the sharp fibers from Fiber Glass may cause skin irritation with discomfort or rash.

Eye contact with Fiber Glass particles may cause mechanical eye irritation with discomfort, tearing, or blurring of vision.

Inhalation of Fiber Glass particles may cause irritation of the upper respiratory passages, with coughing and discomfort.

Results from epidemiology studies suggest no causal relationship between Fiber Glass exposure and cancer. One epidemiology study does indicate a slight increase in lung cancer deaths. The evidence that fiber glass is related to these increased lung cancer deaths is considered weak.

Individuals with preexisting diseases of the lungs may have increased susceptibility to the toxicity of excessive exposures.

TALC

Short-term over-exposure by inhalation to Talc may cause irritation of the nose, throat and lungs with cough, difficulty breathing or shortness of breath. Long-term over-exposure may lead to chronic lung disease with impaired lung function and abnormal chest x-rays.

Increased susceptibility to the effects of Talc may be observed in persons with pre-existing disease of the lungs.

GRAPHITE

(HAZARDS IDENTIFICATION - Continued)

Long-term inhalation of Graphite dust or powder may cause chronic lung disorders with symptoms of lung insufficiency.

Individuals with preexisting diseases of the lungs may have increased susceptibility to the toxicity of excessive exposures.

CARBON BLACK

Immediate effects of overexposure to Carbon Black by inhalation may include irritation of the nose, throat, and lungs with cough, difficulty breathing or shortness of breath.

If particles from Carbon Black contact the eye, mechanical irritation with tearing, pain or blurred vision may result.

Significant skin permeation, and systemic toxicity, after contact with Carbon Black appears unlikely. There are no reports of human sensitization.

Epidemiologic studies demonstrate no significant risk of human cancer from exposure to Carbon Black. While some reports cite an increased incidence of pulmonary abnormalities, such as decreased pulmonary function and radiological changes among Carbon Black workers, other reports show no correlation between exposure and effects on pulmonary function or disease.

Increased susceptibility to the effects of Carbon Black may be observed in persons with pre-existing disease of the lungs.

TITANIUM DIOXIDE

Short-term overexposure by inhalation to Titanium Dioxide may cause irritation of nose, throat, and lungs with cough, difficulty breathing or shortness of breath.

Repeated skin contact with Titanium Dioxide may cause drying or cracking of the skin in sensitive individuals.

Eye contact with Titanium Dioxide may cause eye irritation with tearing, pain or blurred vision.

Results of a DuPont epidemiology study showed that employees who had been exposed to Titanium Dioxide were at no greater risk of developing lung cancer than were employees who had not been exposed to Titanium Dioxide. No pulmonary fibrosis was found in any of the employees and no association was observed between Titanium Dioxide exposure and chronic respiratory disease or x-ray abnormalities. Based on the results of this study, DuPont concludes that Titanium Dioxide will not cause lung cancer or chronic respiratory disease in humans at concentrations experienced in the workplace.

(HAZARDS IDENTIFICATION - Continued)

Carcinogenicity Information

The following components are listed by IARC, NTP, OSHA or ACGIH as carcinogens.

Material	IARC	NTP	OSHA	ACGIH
CARBON BLACK	2B			

FIRST AID MEASURES

First Aid

INHALATION
No specific intervention is indicated as the compound is not likely to be hazardous by inhalation. Consult a physician if necessary. If exposed to fumes from overheating or combustion, move to fresh air. Consult a physician if symptoms persist.

SKIN CONTACT
The compound is not likely to be hazardous by skin contact, but cleansing the skin after use is advisable. If molten polymer gets on skin, cool rapidly with cold water. Do not attempt to peel polymer from skin. Obtain medical treatment for thermal burn.

EYE CONTACT
In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician.

INGESTION
No specific intervention is indicated as compound is not likely to be hazardous by ingestion.

FIRE FIGHTING MEASURES

Flammable Properties

Flash Point : Not Applicable

Like most organic powders or crystals, under severe dusting conditions, this material may form explosive mixtures in air. Hazardous gases/vapors produced in fire are carbon monoxide, carbon dioxide.

Extinguishing Media

Water, CO2, Foam, Dry Chemical.

Fire Fighting Instructions

Wear self-contained breathing apparatus.

ACCIDENTAL RELEASE MEASURES

Safeguards (Personnel)

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

Spill Clean Up

Shovel or sweep up.

HANDLING AND STORAGE

Handling (Personnel)

See FIRST AID and PERSONAL PROTECTIVE EQUIPMENT SECTIONS.

Storage

Store in a cool, dry place. Store away from ignition sources, combustibles.

EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls

VENTILATION When hot processing this material, use local and/or general exhaust ventilation to control the concentration of vapors and fumes below exposure limits.

In cutting or grinding operations with this material, use local exhaust to control the concentration of dust below exposure limits.

Personal Protective Equipment

EYE/FACE PROTECTION

Wear safety glasses. Wear coverall chemical splash goggles and face shield when possibility exists for eye and face contact due to splashing or spraying of molten material. A full face mask respirator provides protection from eye irritation.

RESPIRATORS

A NIOSH/MSHA approved air purifying respirator with an organic vapor cartridge with a dust/mist filter may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Use a positive pressure air supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air purifying respirators may not provide adequate protection.

(EXPOSURE CONTROLS/PERSONAL PROTECTION - Continued)

During grinding, sanding, or sawing operations use a NIOSH/MSHA approved air purifying respirator with dust/mist cartridge or canister if airborne particulate concentrations are expected to exceed permissible exposure levels.

PROTECTIVE CLOTHING

If there is potential contact with hot/molten material, wear heat resistant clothing and footwear.

Wear leather or cotton gloves when sawing, routing, drilling or sanding.

Exposure Guidelines

Exposure Limits
"ZENITE" POLYMER ALL IN SYNONYM LIST LCP012

PEL	(OSHA)	: Particulates (Not Otherwise Regulated) 15 mg/m3, 8 Hr. TWA, total dust 5 mg/m3, 8 Hr. TWA, respirable dust

Other Applicable Exposure Limits
FIBERGLASS

PEL	(OSHA)	: None Established
TLV	(ACGIH)	: 5 mg/m3, 8 Hr.TWA, inhalable particulate A4
AEL *	(DuPont)	: 5 mg/m3 total dust - 8 Hr. TWA, non-respirable fiber (> 3 microns in diameter) non-fibrous particulate.

Talc, Containing No Asbestos Fibers

PEL	(OSHA)	: 20 mppcf (~3.3 mg/m3), respirable as 8 Hr TWA
TLV	(ACGIH)	: 2 mg/m3, respirable dust, 8 Hr. TWA, A4
AEL *	(DuPont)	: 0.5 mg/m3, 8 & 12 Hr. TWA respirable dust

GRAPHITE

PEL	(OSHA)	: 5 mg/m3, respirable dust, 8 Hr. TWA
TLV	(ACGIH)	: 2 mg/m3, respirable dust, 8 Hr. TWA
AEL *	(DuPont)	: None Established

CARBON BLACK

PEL	(OSHA)	: 3.5 mg/m3, 8 Hr. TWA
TLV	(ACGIH)	: 3.5 mg/m3, 8 Hr. TWA, A4
AEL *	(DuPont)	: 0.5 mg/m3, 8 & 12 Hr.TWA, (Polynuclear Aromatic Hydrocarbon Content <0.1%) Includes Channel, Lamp, and Thermal Black

TITANIUM DIOXIDE

(Other Applicable Exposure Limits - Continued)

PEL	(OSHA)	: 15 mg/m3, total dust, 8 Hr. TWA
TLV	(ACGIH)	: 10 mg/m3, total dust, 8 Hr. TWA, A4
AEL *	(DuPont)	: 10 mg/m3, total dust, 8 Hr. TWA 5 mg/m3, respirable dust, 8 Hr. TWA

* AEL is DuPont's Acceptable Exposure Limit. Where governmentally imposed occupational exposure limits which are lower than the AEL are in effect, such limits shall take precedence.

PHYSICAL AND CHEMICAL PROPERTIES

Physical Data

Melting Point	: 335 C (635 F)
Solubility in Water	: Insoluble
Odor	: No Distinct Odor.
Specific Gravity	: >1

STABILITY AND REACTIVITY

Chemical Stability

Stable at normal temperatures and storage conditions. Hazardous decomposition may occur above 400 C (752 F).

Incompatibility with Other Materials

Incompatible or can react with strong oxidizers.

Decomposition

Hazardous gases or vapors can be released, including toxic and flammable carbon monoxide (CO), carbon dioxide, phenol, and, trace organic acids and esters.

Polymerization

Polymerization will not occur.

TOXICOLOGICAL INFORMATION

Animal Data

Fiber Glass
Skin irritation and mild eye irritation occurs in animals, but these effects are attributed primarily to mechanical damage rather than a chemical effect.

(TOXICOLOGICAL INFORMATION - Continued)

The effects in mice from single exposure by intratrachael instillation with Fiber Glass include an inflammatory response. Repeated inhalation exposures invoked pulmonary macrophage reactions similar to biologically inert dusts.

Tests in some animals with Fiber Glass demonstrate carcinogenic activity. However, these studies were by artificial implantation or injection of fine glass fibers into the chest, abdominal cavity, or trachea and are judged to be irrelevant to industrial exposure. Chronic inhalation exposure of animals to fiber glass at low concentrations produced minimal fibrosis in one study and no adverse effects in a different study.

No animal test reports are available to define mutagenic, developmental, or reproductive hazards.

Talc
Oral LD50: 920 mg/kg in rats
Inhalation 5 hour ALC: > 22 mg/L in rats

Long-term exposure by ingestion to Talc caused no significant decrease in life span.

A single exposure by inhalation to high doses of Talc caused irregular respiration and lacrimation but no evidence of an inflammatory reaction. Repeated exposure caused no adverse effects on survival or histological changes. Long-term exposure in rats caused chronic inflammation, impaired pulmonary function and histopathological changes of the lungs.

One lifetime inhalation study reports an increased incidence of lung and adrenal tumors in rats exposed to Talc. The lung tumors and chronic inflammation occured at dust levels which overwhelmed the animals lung clearance mechanism and, therefore, are of questionable biological relevance for man. The adrenal tumors are unlikely to be a direct effect of Talc exposure and are of questionable relevance. No increases in tumors were observed in mice. Talc has not caused developmental toxicity in animals. No animal data are available to define the reproductive toxicity of Talc. Tests have shown that Talc does not cause genetic damage in bacterial or mammalian cell cultures, or in animals. Animal data indicate that Talc does not cause permanent genetic damage in reproductive cells of mammals (does not cause heritable genetic damage).

Graphite
Oral LD50: > 5,000 mg/kg in rats

Graphite was not an eye irritant when tested in animals.

No animal test reports are available to define carcinogenic, mutagenic, developmental, or reproductive hazards of Graphite.

(TOXICOLOGICAL INFORMATION - Continued)

Carbon Black

Oral ALD, rat: > 25,100 mg/kg

Repeated inhalation exposure of animals to Carbon Black caused inflammation of the respiratory tract, lungs and emphysema.

Repeated exposure to high doses of Carbon Black by ingestion or skin contact caused no significant toxicological effects.

No adequate studies have been conducted in animals to define the carcinogenicity of Carbon Black by ingestion. In several skin painting studies using various Carbon Blacks no carcinogenicity was observed. Tests by inhalation for carcinogenicity in rats show significant increases in lung tumors in female rats but not male rats. In another study using female mice exposed by inhalation to Carbon Black there was no increase in the incidence of respiratory tract tumors. Researchers conducting the rat inhalation studies believe that these effects probably result from the massive accumulation of small dust particles in the lung which overwhelm the normal lung clearance mechanisms. This represents "lung overload" phenomenon, rather than a specific chemical effect of the dust particle in the lung.

Tests have shown that this material does not cause genetic damage in bacterial or mammalian cell cultures. Tests in animals for genetic toxicity have produced mostly negative results. No animal data are available to define developmental or reproductive toxicity.

Titanium Dioxide

Oral ALD:	> 24,000 mg/kg in rats
Dermal ALD:	> 10, 000 mg/kg in rabbits
Inhalation 4 hour ALC:	> 6.82 mg/L in rats

Animal testing indicates Titanium Dioxide is a moderate eye irritant and a slight skin irritant, but is not a skin sensitizer in animals.

Repeated and long term ingestion of Titanium Dioxide caused no significant toxicological effects.

Repeated exposure by inhalation to high doses of Titanium Dioxide caused a typical dust cell reaction.

In lifetime inhalation studies at levels up to 250 mg/m3, no compound-related clinical signs of toxicity were seen in the exposed animals. Slight pulmonary fibrosis was seen at 50 and 250 mg/m3 respirable dust levels but not at 10 mg/m3. There was no evidence of cancer in animals exposed to 10 or 50 mg/m3 respirable Titanium Dioxide. Microscopic lung tumors were seen in 17 percent of the rats exposed to 250 mg/m3 respirable Titanium Dioxide. The lung tumors seen in the rat were different from common human lung cancers, relative to anatomic type and location, occurred only at

(TOXICOLOGICAL INFORMATION - Continued)

dust levels which overwhelmed the animals lung clearance mechanism and, therefore, are of questionable biological relevance for man. In lifetime animal feeding tests at levels up to 50,000 ppm, Titanium Dioxide showed no evidence of cancer or other significant adverse effects in either rats or mice. No animal data are available to define the developmental or reproductive toxicity of Titanium Dioxide. Tests have shown that Titanium Dioxide does not cause genetic damage in bacterial or mammalian cell cultures, or in animals.

ECOLOGICAL INFORMATION

Ecotoxicological Information

No information is available.
AQUATIC TOXICITY:

No information is available. Toxicity is expected to be low based on insolubility in water. Do not discharge to streams, ponds, lakes or sewers.

DISPOSAL CONSIDERATIONS

Waste Disposal

Preferred options for disposal are (1) recycling, (2) incineration with energy recovery, and (3) landfill. The high fuel value of this product makes option 2 very desirable for material that cannot be recycled, but incinerator must be capable of scrubbing out acidic combustion products. Treatment, storage, transportation, and disposal must be in accordance with applicable federal, state/provincial, and local regulations.

TRANSPORTATION INFORMATION

Shipping Information

Not regulated in transportation by DOT/IMO/IATA.

REGULATORY INFORMATION

U.S. Federal Regulations

TSCA Inventory Status : In compliance with TSCA Inventory requirements for commercial purposes.

State Regulations (U.S.)

STATE RIGHT-TO-KNOW

(REGULATORY INFORMATION - Continued)

No substances on the state hazardous substances list, for the states indicated below, are used in the manufacture of products on this Material Safety Data Sheet, with the exceptions indicated.

SUBSTANCES ON THE PENNSYLVANIA HAZARDOUS SUBSTANCES LIST PRESENT AT A CONCENTRATION OF 1 % OR MORE (0.01% FOR SPECIAL HAZARDOUS SUBSTANCES)- Talc, zinc sulfide, graphite, carbon black, titanium dioxide.

WARNING - SUBSTANCES KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER, BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM- None.

The State of California, under Proposition 65, regulates Carbon Black - airborne, unbound particles of respirable size as a carcinogen. In this product, carbon black is not supplied in the form regulated in California.

SUBSTANCES ON THE NEW JERSEY WORKPLACE HAZARDOUS SUBSTANCE LIST PRESENT AT A CONCENTRATION OF 1% OR MORE (O.1% FOR SUBSTANCES IDENTIFIED AS CARCINOGENS, MUTAGENS OR TERATOGENS)- Fiberglass, talc, zinc sulfide, carbon blk, titanium dioxide.

OTHER INFORMATION

Additional Information

MEDICAL USE: CAUTION: Do not use in medical applications involving permanent implantation in the human body. For other medical applications see DuPont CAUTION Bulletin No. H-50102.

The data in this Material Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process.

Responsibility for MSDS : I. V. BEBENSEE
DUPONT ENGINEERING POLYMERS
Address : CHESTNUT RUN PLAZA 713
WILMINGTON, DE 19880-0713
Telephone : (302) 999-4257

# Indicates updated section.

This information is based upon technical information believed to be reliable. It is subject to revision as additional knowledge and experience is gained.

End of MSDS

Test Report

SHENZHEN CITY YONG XIANG PLASTIC PRODUCT CO., LTD.

A FLOOR MAOZHOUSAN INDUSTRY PARK HAOSAN VILLAGE BUYONG VILLAGE SHAJING TOWN
SHENZHEN
CHINA

The following sample(s) was/were submitted and identified on behalf of the clients as : LCP BLUE

SGS Job No. :	CP12-010669 - GZ
Date of Sample Received :	15 Mar 2012
Testing Period :	15 Mar 2012 - 20 Mar 2012
Test Requested :	Selected test(s) as requested by client.
Test Method :	Please refer to next page(s).
Test Results :	Please refer to next page(s).
Conclusion :	A:Based on the performed tests on submitted samples, the results of Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBB), Polybrominated diphenyl ethers (PBDE) comply with the limits as set by RoHS Directive 2011/65/EU Annex II; recasting 2002/95/EC.

Signed for and on behalf of
SGS-CSTC Ltd.

Kenny Wang
Approved Signatory

SGS-CSTC Standards Technical Services Co., Ltd.
Guangzhou Testing Service Center Chemical Laboratory
198 Kezhu Road,Scientech Park Guangzhou Economic & Technology Development District,Guangzhou,China 510663 t (86-20) 82155555 f (86-20) 82075113 www.cn.sgs.com
中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075113 e sgs.china@sgs.com

Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
1	CAN12-026759.002	Dk-blue plastic grains

Remarks :

(1) 1 mg/kg = 1 ppm = 0.0001%

(2) MDL = Method Detection Limit

(3) ND = Not Detected (< MDL)

(4) "-" = Not Regulated

A:RoHS Directive 2011/65/EU

Test Method : With reference to IEC 62321:2008

(1) Determination of Cadmium by ICP-OES.

(2) Determination of Lead by ICP-OES.

(3) Determination of Mercury by ICP-OES.

(4) Determination of Hexavalent Chromium by Colorimetric Method using UV-Vis.

(5) Determination of PBBs / PBDEs content by GC-MS.

Test Item(s)	Limit	Unit	MDL	*002*
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1,000	mg/kg	2	6
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (CrVI)	1,000	mg/kg	2	ND
Sum of PBBs	1,000	mg/kg	-	ND
Monobromobiphenyl	-	mg/kg	5	ND
Dibromobiphenyl	-	mg/kg	5	ND
Tribromobiphenyl	-	mg/kg	5	ND
Tetrabromobiphenyl	-	mg/kg	5	ND
Pentabromobiphenyl	-	mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl	-	mg/kg	5	ND
Octabromobiphenyl	-	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
Decabromobiphenyl	-	mg/kg	5	ND
Sum of PBDEs	1,000	mg/kg	-	ND
Monobromodiphenyl ether	-	mg/kg	5	ND

Test Item(s)	Limit	Unit	MDL	*002*
Dibromodiphenyl ether	-	mg/kg	5	ND
Tribromodiphenyl ether	-	mg/kg	5	ND
Tetrabromodiphenyl ether	-	mg/kg	5	ND
Pentabromodiphenyl ether	-	mg/kg	5	ND
Hexabromodiphenyl ether	-	mg/kg	5	ND
Heptabromodiphenyl ether	-	mg/kg	5	ND
Octabromodiphenyl ether	-	mg/kg	5	ND
Nonabromodiphenyl ether	-	mg/kg	5	ND
Decabromodiphenyl ether	-	mg/kg	5	ND

Notes :

(1) The maximum permissible limit is quoted from the directive 2011/65/EU, Annex II

B:Halogen

Test Method : With reference to EN 14582: 2007, analysis was performed by Ion Chromatograph (IC).

Test Item(s)	Unit	MDL	*002*
Fluorine (F)	mg/kg	50	426
Chlorine (Cl)	mg/kg	50	ND
Bromine (Br)	mg/kg	50	ND
Iodine (I)	mg/kg	50	ND

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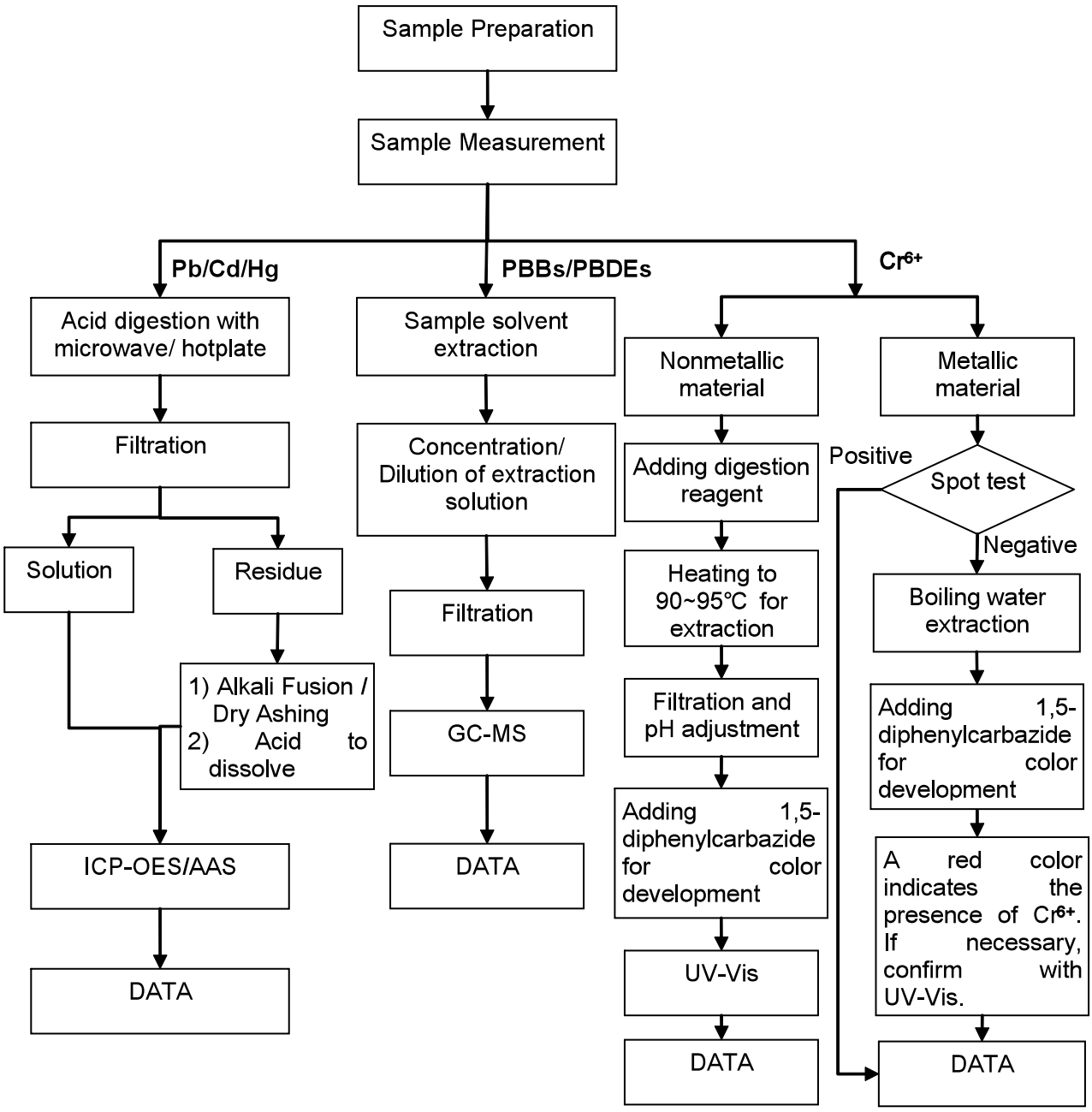
ATTACHMENTS

RoHS Testing Flow Chart

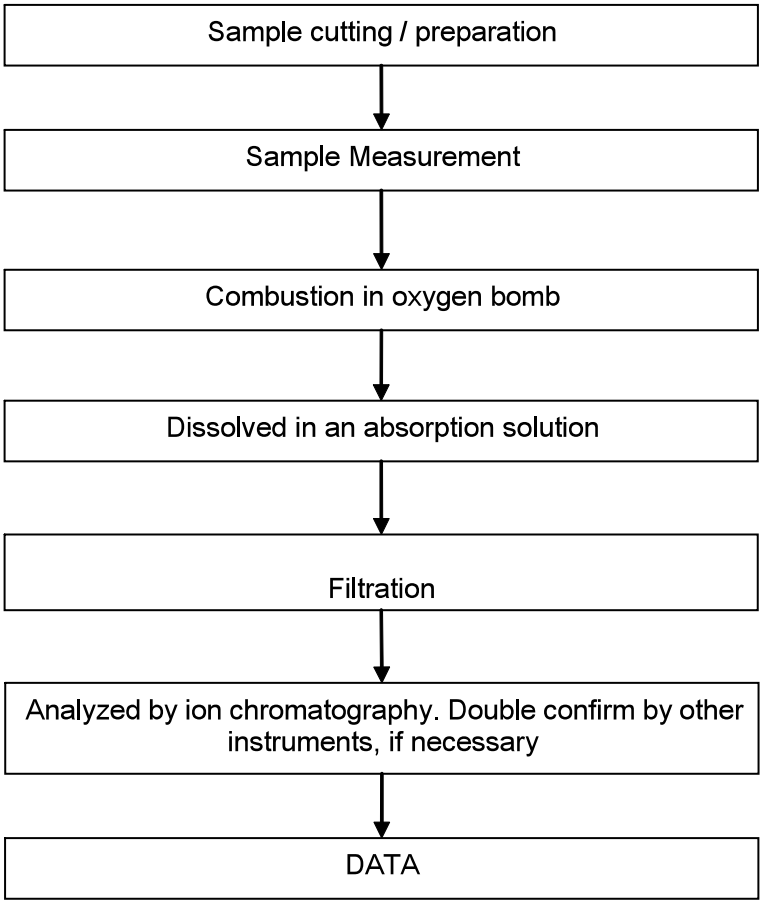
1) Name of the person who made testing: Bella Wang / Cutey Yu / Ross Zhan
2) Name of the person in charge of testing: Adams Yu / Ryan Yang
3) These samples were dissolved totally by pre-conditioning method according to below flow chart (Cr^{6+} and PBBs/PBDEs test method excluded).



ATTACHMENTS

Halogen Testing Flow Chart

1) Name of the person who made testing: Bob Song
2) Name of the person in charge of testing: Rain Qiao



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Sample photo:

CAN12-026759.002

SGS authenticate the photo on original report only

*** End of Report ***

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Member of the SGS Group (SGS SA)

产品质量证明书

CERTIFICATE OF QUALITY

北京金鹰铜业有限责任公司
BeiJing Jin Ying Copper Products Co.,Ltd
Xiaojie Liyuan Tongzou Beijing China
TEL:086-01060526450-207 FAX:01060527336

客户名称 Customer	合同号 Contract No	重量(Kg) Weight(Kg)	签发日期 Date of Issue
东莞京温贸易公司	2006-04-10	2536	2006-04-18

牌号 Brand	标准 Standard No	规格 (mm) Dimension	批号 Lot No	状态 Temper	表面质量 Surface Quality
C2680	GB/T5231-2001	0.2X305	2-2501	H	OK

化学成份 Chemioal compositon

		Cu	Pb	Fe	Bi	P	Zn
标准	Min	63.5	/	/	/	0.1	/
Spec	Max	66.5	0.02	0.1	0.002	0.02	
实测	Acteal	64.5	0.01	0.03	/	0.011	余量

尺寸公差(mm) Size Tolerance

名称 name	厚度Thickness	宽度 Width	长度Length
标准 Spec	0.2±0.01	305±0.5	/
Min	0.19	304.5	/
Max	0.21	305.5	/

机械性能 Mechanism propertics

项目 Item		抗拉强度(kgf/mm2) Tensile Strength	延伸率 (%) Elongation	硬度 (HV) Hardness		
标准	MIN	/	14	140		
Spec	MAX	/	18	160		
实测 Actual		486	16	152		

质检部长 chief in quality:　　检验员 inspecter:

北京金鹰铜业有限责任公司 产品质量专用章

物質安全資料表

MSDS C2680

深圳市明鑫工業材料物質安全資料表編號：	**MX008**
版次：	**1**
出版日期：	**04-20-2010**

1．物品與廠商資料

物品中（英文）名稱：	**黃銅（brass copper strip）**	
物品代號：	**C2680**	
化學名稱：	**Zn—Cu 金屬合金**	
類別：	金屬混合物	
供應商名稱：	深圳市明鑫工業材料有限公司	
供應商地址：	深圳市宝安区沙井镇南环路和一社区第三工业区明鑫工业园	
供應商電話：	**0755-27560587**	**FAX：0755-27560657**
供應商網址：	**www.mingschin.com**	

2．產品成分

化學名稱：	**銅 Cu**
比例：	**64-68%**
化學名稱：	**Zn 锌**
比例：	余量

OHSA：本產品在固體時不具危險性。

3．危害辨識資料

警告：
長時間曝露於粉塵及煙霧的工作環境下，對於眼睛、呼吸系統、皮膚會造成刺激傷害，必須配戴保護器具，包括護目鏡、適當衣物，必須要保護全部身體。身體被接觸之部位，須徹底清洗乾淨。

種類的名稱：	銅、锌之混合物
危險標示類別：	金屬粉塵或煙霧將對皮膚、眼睛造成刺激性且對肺具有毒性，但金屬成品本身不具危害性
危害級數（粉塵及煙霧）：	健康：1；可燃：0（0=低、4=極高）

4．急救措置

對於粉塵及煙霧危害：

眼睛接觸：	以大量清淨水沖洗上下眼皮內部（至少 15 分鐘），若眼睛被刺激不適者，立即送醫檢查
食入時：	大量喝水並催吐，迅速送醫院檢查
皮膚接觸：	以清水清洗乾淨
吸入時：	送至通風良好較陰涼處休息，以毛布保暖，嚴重者迅速送醫院檢查診斷

5．火災及爆炸危害資料

燃燒性資料：

爆炸性：	無
可燃性：	無
燃燒性：	無
閃火點：	不適用
自燃性：	不適用

滅火劑

滅火方式：使用滅火劑於材料表面即可

消防建議

注意粉塵可能導致爆炸或產生可燃燒氣體

6．洩漏的處置

本產品在加工時產生粉塵時，有可能產生爆炸，必須將火源移除，也惟有粉塵型態時才可能產生洩漏，所以必須裝設吸塵裝置，過濾空氣中之粉塵，以降低其粉塵濃度	
洩漏於空氣中：	不適用
洩漏于水中：	不適用
洩漏於地面中：	不適用

7．取用及儲運方式

取用注意事項

軋延產品之端面易割傷皮膚應小心取用。 切削加工時會產生粉塵應小心眼睛、皮膚及呼吸系統，應配戴保護器具。 小心粉塵不可洩漏至空氣中。 需注意產品有翻倒之危險性易造成壓傷，吊運時要十分注意。 打包帶剪除時，小心其末端會彈起，對人員之身體、皮膚及眼睛造成割傷。 衣物或器具上之粉塵及以水洗或吸塵器清潔，不可用拍打或其他方式處理。

儲存條件

儲存放置：避免與酸性或鹼性化學物質接觸，或放置於酸/鹼性氣體之場所，不可在高於或超出適宜溫度與濕度（最適宜環境：常溫 25℃左右，濕度在 50℃以下）環境內長期放置。

8．人員曝露防護措施

Cu 曝露標準：		**OSHA(PEL)**		**ACGIH(TLV)**	
		ppm	**mg/m^3**	**ppm**	**mg/m^3**
	煙霧	**無**	**0.1**	**無**	**0.2**
	粉塵	**無**	**1**	**無**	**1**
Zn 曝露標準：		**OSHA(PEL)**		**ACGIH(TLV)**	
		ppm	**mg/m^3**	**ppm**	**mg/m^3**
	粉塵	**無**	**無**	**無**	**無**
呼吸防護：	長時間曝露於粉塵及煙霧的工作環境下，需要呼吸防護器具，配戴 NIOSH 認證防塵口罩				
通風防護：	工作場所中，若是會產生煙霧及粉塵時，必須要有通風設備裝置及集塵裝置，且工作中不可飲食及抽煙				
眼睛及皮膚防護：	需要配戴護目鏡，防護手套防止割傷				
人員防護：	作業時應著適當之工作服及安全鞋				

9．物理及化學性質

外觀：	黃色光澤的固態金屬
熔點：	無資料
沸點：	無資料
比重：	**8.47**
蒸氣壓：	不適用
溶解度：	不適用
PH 值 25℃：	不適用

10．安定性及反應性資料

非活性物質（常溫 25℃左右，濕度在 50℃以下環境中儲存時安定性佳；避免高溫高壓及酸碱）

11．毒性資料

來源途徑

粉塵：食入、皮膚接觸、吸入、眼睛接觸 煙霧：吸入、眼睛接觸、皮膚接觸 本產品的成品不具毒性

動物毒性：本合金產品不具毒性
其單一成份之毒性說明如下供參考 皮膚腐蝕性：無此資料 刺激性（皮膚、眼睛）：銅產品會產生接觸性皮膚炎 急性毒性：銅的粉末經口食入，會有急性中毒症狀：嘔吐、無力感及胃疼，粉塵吸入過多，會有胸痛、發燒等症狀。 粉塵、煙霧會讓原有氣喘、肺氣腫之病患病情加重

12．生態資料

本產品的成品對生態不具毒性

分解性：無資料 蓄積性：無資料 突變性：本產品沒有資料顯示會造成突變性 魚毒性：水中的銅濃度，在 **0.015-3.0mg/l**，尤其在軟水中，曾有報告會對許多種類的魚、甲殼類的動物及軟體動物、浮游生物具有毒性

13．廢棄處理

本產品不屬於危害性廢棄物，須丟棄時可以委託回收商予以回收再生處理

14．運輸資料

運送時本產品不要直接與水接觸，並且要注意會有滑落、翻落的危險發生；運輸過程中不能有碰撞及擠壓，須保證溫度與濕度適中，不可導致材料變形或氧化。

15．法規資料

通常無特定法令規定，但是在會產生粉塵的場所必須遵守勞工安全衛生法勞工作業環境空氣中有害物質容許濃度標準
USA/OHSA: Occupational Safety & Health Administration
USA/ACGIH Guide to protective Clothing. Cincinnati, OH: American Conference of Government Industrial Hygienists,1987
USA/SARA313

16．其他資料

本 **MSDS** 內容資料應被所有使用、運送、儲存或曝露於本產品之公司/人員充分瞭解與接受將其應用於使用、加工、製造或管理與本產品有關之作業規定上。本 **MSDS** 資料內容在編訂時已盡可能將最新之資料納入，但對所有內容並不予以任何保證。

DONGGUAN GOLDSUN COPPER PRODUCTS CO.,LTD.

NO.8,CHUANGSHENG ROAD,THE SECOND INDUSTRIAL SHANGSHA CHANG'AN TOWN DONGGUAN CITY
CHINA

The following sample(s) was/were submitted and identified on behalf of the clients as : C2680

SGS Job No. :	CP12-002692 - GZ
Date of Sample Received :	06 Feb 2012
Testing Period :	06 Feb 2012 - 10 Feb 2012
Test Requested :	Selected test(s) as requested by client.
Test Method :	Please refer to next page(s).
Test Results :	Please refer to next page(s).

Signed for and on behalf of
SGS-CSTC Ltd.

Merry

Merry Lv
Approved Signatory

SGS-CSTC Standards Technical Services Co., Ltd.
Guangzhou Testing Center Chemical Laboratory.
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Test Results :

Test Part Description :

[redacted]	[redacted]	[redacted]
1	CAN12-007879.001	Brassy metal

Remarks :

(1) 1 mg/kg = 1 ppm = 0.0001%

(2) MDL = Method Detection Limit

(3) ND = Not Detected (< MDL)

(4) "-" = Not Regulated

[redacted]

Test Method : With reference to IEC 62321:2008

(1) Determination of Cadmium by ICP-OES.

(2) Determination of Lead by ICP-OES.

(3) Determination of Mercury by ICP-OES.

(4) Determination of Hexavalent Chromium by Spot test / Colorimetric Method using UV-Vis.

Test Item(s)	Unit	MDL	*001*
Cadmium (Cd)	mg/kg	2	ND
Lead (Pb)	mg/kg	2	11
Mercury (Hg)	mg/kg	2	ND
Hexavalent Chromium (CrVI)	-	◇	Negative

Notes :

(1)◇= a. Negative means the absence of CrVI on the tested areas;
b. Positive means the presence of CrVI on the tested areas.
For corrosion protection coatings on metals: Information on storage conditions and production date of the tested sample is unavailable and thus results of Cr(VI) represent status of the sample at the time of testing.

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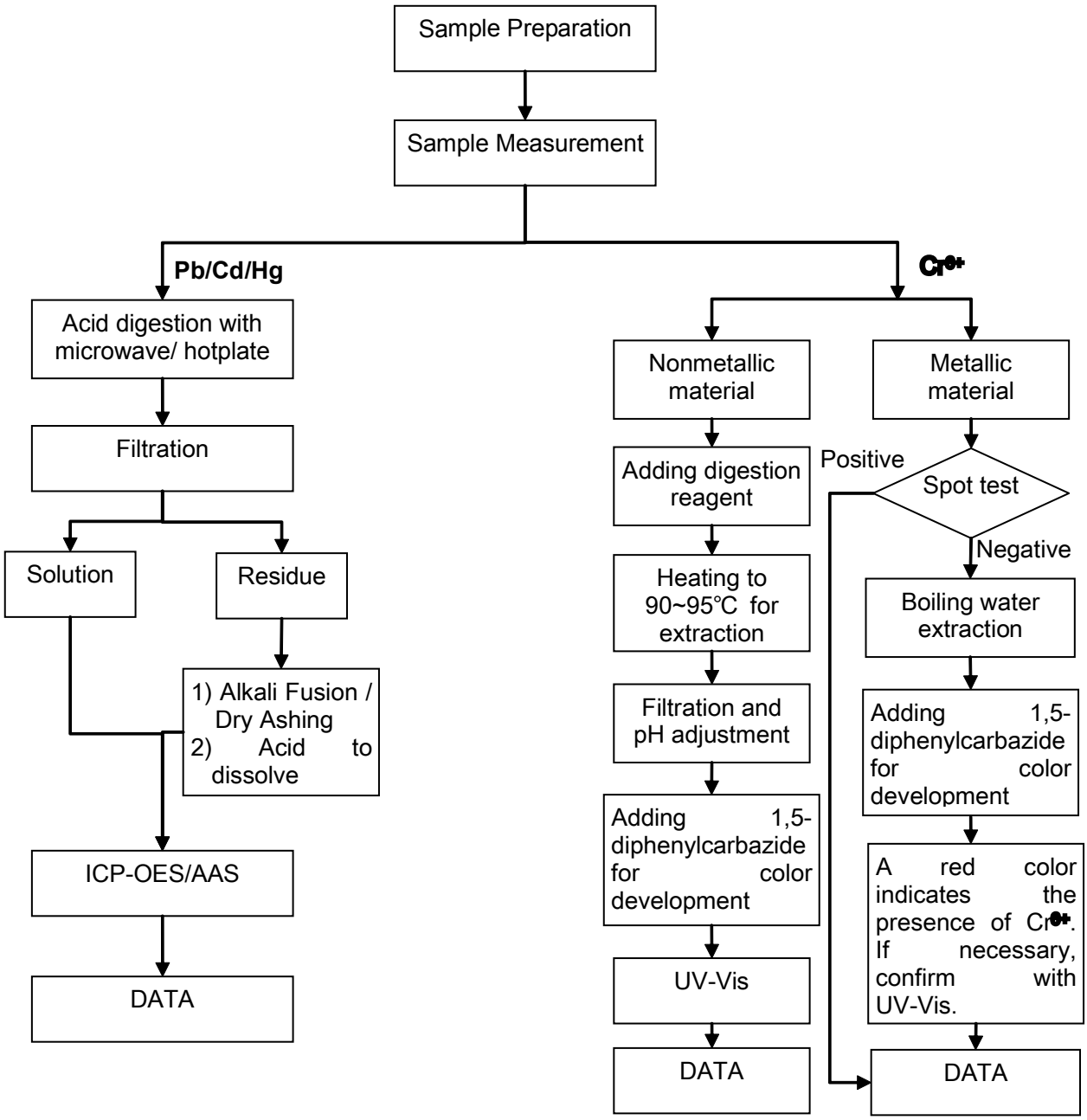
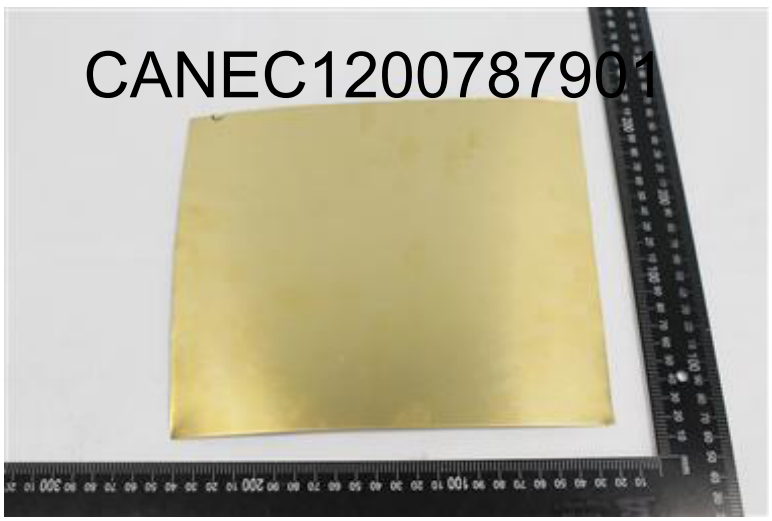
ATTACHMENTS

RoHS Testing Flow Chart

1) Name of the person who made testing: Bella Wang / Ross Zhan
2) Name of the person in charge of testing: Adams Yu
3) These samples were dissolved totally by pre-conditioning method according to below flow chart (Cr6+ test method excluded).



Sample photo:



CAN12-007879.001

SGS authenticate the photo on original report only

*** End of Report ***

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Member of the SGS Group (SGS SA)

INSPECTION CERTIFICATE

ใบรับรองคุณภาพสินค้า

Thai Cold Rolled Steel Sheet Public Co., Ltd.

Head office : 23/1 Prapawit Bldg. 5th floor Surasak road, Si Lom, Bangrak, Bangkok 10500 Thailand
Tel. (662) 630-0100 Fax. (662) 630-3321

Plant office : 111 Moo 4 Meeramphueng District, Bangsaphan, Prachuabkhirikhan 77140, Thailand
Tel. (032) 548-375-81 Fax. (032) 548-382-3

Customer : VAN SHUNG CHONG HONG LTD.

Purchaser : MARUBENI-ITOCHU STEEL PTE LTD BANGKOK BR

Reference No.: EX0809

Commodity : COLD REDUCED CARBON STEEL COIL

Specification : SPCC-SD-OILED

Size : 0.300 X 1000 X COIL

Certificate No. : 50106

Page No. : 01 of 01

Date : 11/04/2006

Contract No. : C063B05-001

Coil	Quantity	Mass (Ton)	Chemical Composition (%) C	Si	Mn	P	S	S-AL	Cr	N	Tensile Test YP	TS	EL	HRB	Heat No.
			X1000	X100		X1000			X100	X1000	N/sq.mm		(%)		
1-06[illegible]11	1	7.410	50	1	25	8	8				179	299	41	49	
3-17[illegible]	1	8.610	40	1	24	6	10				201	346	41	50	
3-204222	1	8.410	40	1	25	7	9				184	315	42	50	
3-20[illegible]	1	8.820	40	1	25	7	9				184	315	42	50	
3-20423[illegible]	1	8.870	40	1	25	7	9				190	319	41	50	
3-20[illegible]	1	8.930	40	1	25	7	9				190	319	41	50	
TOTA[illegible]	6	51.050													

We hereby certify that the material described herein has been tested and inspected with satisfactory results in accordance with the above specification.

Signature

Manager of Technical and Quality Control Department

F-PS-002 REV.01 TD003

物質安全資料表(M S D S)

文件编号	DS-IQC-08
版　　本	A/1

一、物品與廠商資料

物品名稱: 冷轧板　SPCC　SPCD　SPCEN
類別: 金属类——铁料
制造商或供應商名稱、地址及電話: 广州东时创展贸易有限公司 广州荔湾区花地大道中 89 号芳村金融大厦 17 层 020-81615500
緊急聯絡電話/傳真電話: TEL：　020-81615500　　FAX：020-81615599

二、產品成份

中英文名稱,CAS NO.:　铁（Fe）,7439-89-6
比例(成分百分比):　　余量(remainder)　99%
中英文名稱,CAS NO. 成分百分比: 碳（C）,7440-44-0　,0.12%
中英文名稱,CAS NO. 成分百分比: 硅（Si　）,7440-21-3, 0.02%
中英文名稱,CAS NO. 成分百分比: 锰（Mn）,7439-96-5,0.30%
中英文名稱,CAS NO. 成分百分比: 磷（P）,7723-14-0,　0.04%
中英文名稱,CAS NO. 成分百分比: 硫（S）,7704-34-9,　0.045%
比例(成分百分比):　余量

三、危害辨识资料

最重要危害效應	健康危害效應: 固体状态不造成危害。
	環境影響: 本产品无毒性，不会直接对环境造成影响。
	物理性及化學性危害: 不适用
	长时间暴露于粉尘的工作环境下，对于眼睛，呼吸系统，皮肤会造成刺激性的危害，必须配戴保护器具，包括眼镜，衣物，必须加强保护。
主要症狀:吸入铁粉对呼吸道有影响	
物品危害分類: 一般	

四、急救措施

不同暴露途徑之急救方法:

- 吸入: 送至通风良好较阴凉处休息，以毛布保暖，严重者迅速送医院检查诊断。
- 皮膚接觸: 以清水清洗干净
- 眼睛接觸:以大量清净水冲洗上下眼皮内部，若眼睛被刺激不适者，立即送医院检查。
- 食入: 大量喝水并催吐，迅速送医院检查。

五、滅火措施

爆炸性:无
可燃性:无
燃烧性: 无

灭火方式: 使用灭火剂于材料表面即可

六、泄漏處理方法

個人應注意事項: 不适用
環境注意事項: 不适用
清理方法: 不适用

七、安全處置與儲存方法

處置: 产品端面易割伤皮肤应小心取用，须注意产品翻倒易造成压伤，吊运时要十分注意
儲存: 存于干燥通风的环境，避免受潮，水或酸性气体之场所

八、暴露預防措施

工程控制:
控制參數: • • 生物指標:
個人防護設備:焊接时用防护工具保护，吊动时带上安全帽。 • 呼吸防護:产生粉尘的情况下带口罩保护 • 手部防護:作业时带上手套 • 皮膚及身體防護: 在溶接，研削，切割等作业时手、着装要注意采取相应的防护措施

九、物理及化學性質

物質狀態: 一般的使用环境下为固体金属	形狀: 卷
顏色: 银白色	氣味: 无
PH 值: 不适用	沸點/沸點範圍:无资料
分解溫度: 不适用	閃火點: 不适用 測試方法:
自然溫度: 不适用	爆炸界限: 不适用
蒸氣壓 : 不适用	蒸氣密度: 不适用
密度: 7.8g/cm3	溶解度: 1455-1535℃

十、安定性及反應性

安定性: 非活性物质
特殊狀況下可能之危害反應:受潮情况下材料会氧化，没有危害物质，但材料表面受损
應避免之狀況: 高温，受潮
應避免之物質: 水，酸性物质
危害分解物: 无

十一、毒性資料

急毒性: 无

局部效應: 无
致敏感性: 无
慢毒性或長期毒性: 无
特殊效應: 铁粉经口食入过多会有急性中毒症状：呕吐、无力感和胃疼。

十二、生態資料

可能之環境影響/環境流布: 现在没有资料显示会对环境有所影响，但元素的一部分可能会，但对生态不具有毒性。

十三、廢棄處置方法

廢棄處置方法: 本产品不属于危害性废弃物，须丢弃时可以委托回收商回收再生处理。

十四、運送資料

國際運送規定:本产品不直接和水接触，并且要注意会有滑落的危险性发生。
聯合國編號: 无资料
國內運送規定: 本产品不直接和水接触，并且要注意会有滑落的危险性发生。
特殊運送方法及注意事項: 本产品不直接和水接触，并且要注意会有滑落的危险性发生。

十五、法規資料

適用法規:通常無特定法令規定，但是在會產生粉塵的場所必須遵守勞工安全衛生法務工作業環境空氣中有害物質容許濃度標準

十六、其他資料

參考文件	JIS G 3141
制表單位	广州东时创展贸易有限公司
	本 MSDS 资料内容在编制时已尽可能将最新资料纳入，但对所有内容并不予以任何保证。
制表人	職稱: 代表　　姓名(簽章): 朱乙婷
制表日期	2010-1-1

广州东时创展贸易有限公司 业务专用章

SHENZHEN XINGHEXIANG HARDWARES FACTORY

FLOOR1,FUJINSHUN INDUSTRIAL PARK ,BUILDING D,XUEZIWEI INDUSTRIAL ESTATE,YABIAN ,SHAJING,SHENZHEN
CHINA

The following sample(s) was/were submitted and identified on behalf of the clients as : SPCC

SGS Job No. :	CP11-016441 - SZ
Supplier :	FOSHAN SANSHUI FORTUNE LEADING STEEL LTD
Date of Sample Received :	09 Jan 2012
Testing Period :	09 Jan 2012 - 12 Jan 2012
Test Requested :	Selected test(s) as requested by client.
Test Method :	Please refer to next page(s).
Test Results :	Please refer to next page(s).
Conclusion :	Based on the performed tests on submitted samples, the results of Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBB), Polybrominated diphenyl ethers (PBDE) comply with the limits as set by RoHS Directive 2011/65/EU Annex II; recasting 2002/95/EC

Signed for and on behalf of
SGS-CSTC Ltd.

Merry Lv
Approved Signatory

SGS-CSTC Standards Technical Services Co., Ltd.
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中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075113 e sgs.china@sgs.com

Test Results :

Test Part Description :

[redacted]	[redacted]	[redacted]
1	CAN12-001889.001	Silvery metal

Remarks :

(1) 1 mg/kg = 1 ppm = 0.0001%

(2) MDL = Method Detection Limit

(3) ND = Not Detected (< MDL)

(4) "-" = Not Regulated

[redacted]

Test Method : With reference to IEC 62321:2008

(1) Determination of Cadmium by ICP-OES.

(2) Determination of Lead by ICP-OES.

(3) Determination of Mercury by ICP-OES.

(4) Determination of Hexavalent Chromium by Spot test / Colorimetric Method using UV-Vis.

(5) Determination of PBBs / PBDEs by GC-MS.

Test Item(s)	Limit	Unit	MDL	*001*
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1,000	mg/kg	2	ND
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (CrVI)	-	-	◇	Negative
Sum of PBBs	1,000	mg/kg	-	ND
Monobromobiphenyl	-	mg/kg	5	ND
Dibromobiphenyl	-	mg/kg	5	ND
Tribromobiphenyl	-	mg/kg	5	ND
Tetrabromobiphenyl	-	mg/kg	5	ND
Pentabromobiphenyl	-	mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl	-	mg/kg	5	ND
Octabromobiphenyl	-	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
Decabromobiphenyl	-	mg/kg	5	ND
Sum of PBDEs	1,000	mg/kg	-	ND
Monobromodiphenyl ether	-	mg/kg	5	ND

Test Item(s)	Limit	Unit	MDL	*001*
Dibromodiphenyl ether	-	mg/kg	5	ND
Tribromodiphenyl ether	-	mg/kg	5	ND
Tetrabromodiphenyl ether	-	mg/kg	5	ND
Pentabromodiphenyl ether	-	mg/kg	5	ND
Hexabromodiphenyl ether	-	mg/kg	5	ND
Heptabromodiphenyl ether	-	mg/kg	5	ND
Octabromodiphenyl ether	-	mg/kg	5	ND
Nonabromodiphenyl ether	-	mg/kg	5	ND
Decabromodiphenyl ether	-	mg/kg	5	ND

Notes :

(1) The maximum permissible limit is quoted from the directive 2011/65/EU, Annex II

(2)◇= a. Negative means the absence of CrVI on the tested areas;

b. Positive means the presence of CrVI on the tested areas.

For corrosion protection coatings on metals: Information on storage conditions and production date of the tested sample is unavailable and thus results of Cr(VI) represent status of the sample at the time of testing.

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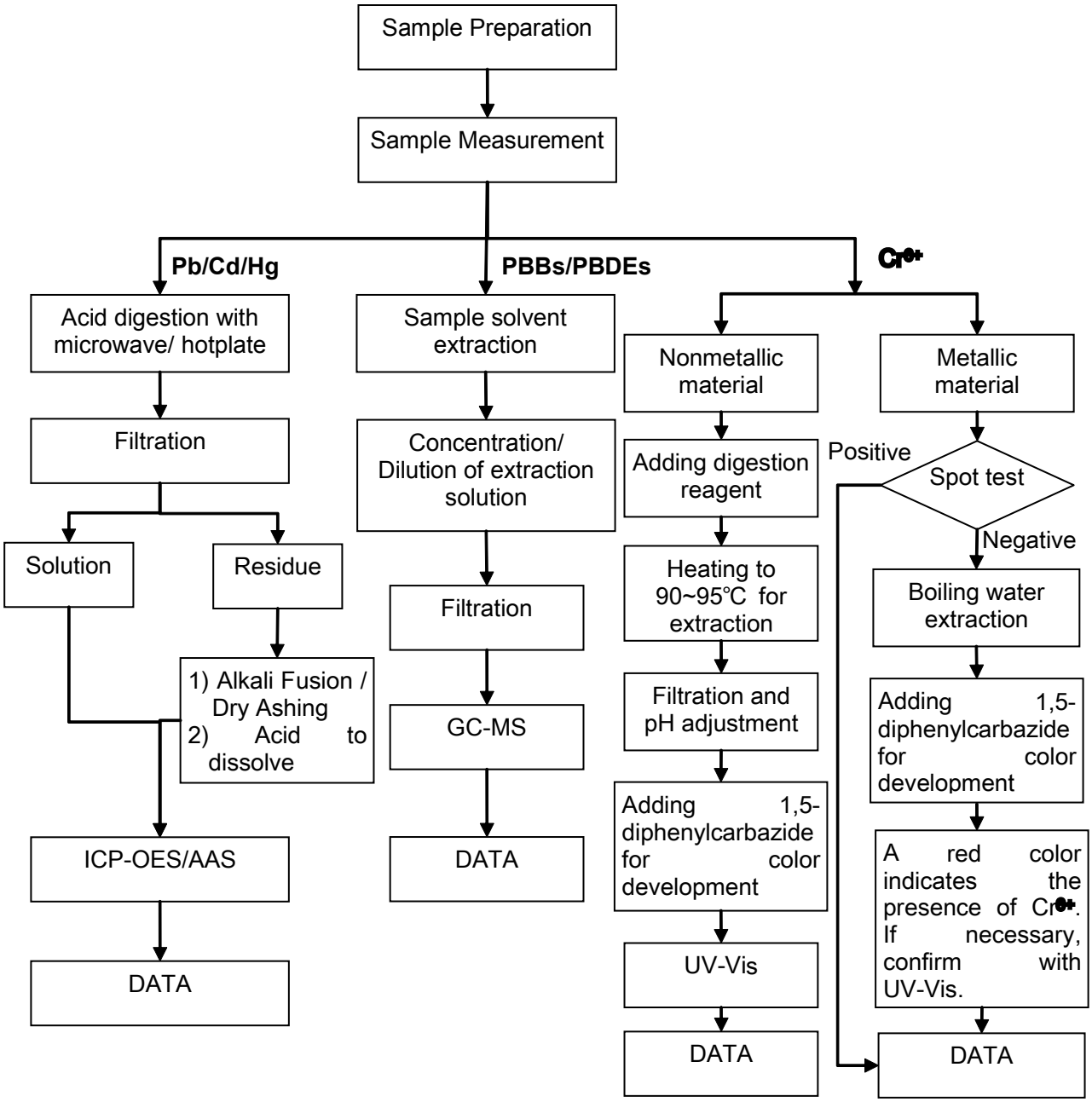
ATTACHMENTS

RoHS Testing Flow Chart

1) Name of the person who made testing: Bella Wang / Cutey Yu / Ross Zhan
2) Name of the person in charge of testing: Adams Yu / Ryan Yang
3) These samples were dissolved totally by pre-conditioning method according to below flow chart (Cr^{6+} and PBBs/PBDEs test method excluded).



Sample photo:

CAN12-001889.001

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SHENZHEN XIECHENG HARDWARE PLASTIC PRODUCT COMPANY

4 F,C RIDGEPOLE HEPING INDUSTRIAL ZONE,FENGTANG ROAD,FUYONG STREET,BAO`AN DISTRICT,SHENZHEN CITY, GUANDONG,CHINA

The following sample(s) was/were submitted and identified on behalf of the clients as : Nickel plating

SGS Job No. :	CP12-033096 - SZ
Date of Sample Received :	12 Jul 2012
Testing Period :	12 Jul 2012 - 19 Jul 2012
Test Requested :	Selected test(s) as requested by client.
Test Method :	Please refer to next page(s).
Test Results :	Please refer to next page(s).
Conclusion :	Based on the performed tests on submitted samples, the results of Lead, Mercury, Cadmium, Hexavalent chromium comply with the limits as set by RoHS Directive 2011/65/EU Annex II; recasting 2002/95/EC.

Signed for and on behalf of
SGS-CSTC Ltd.

Almay Gao
Approved Signatory

SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Testing Center Chemical Laboratory.
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Test Results :

Test Part Description :

[redacted]	[redacted]	[redacted]
1	CAN12-093336.002	Silver-gray plated metal

Remarks :

(1) 1 mg/kg = 1 ppm = 0.0001%

(2) MDL = Method Detection Limit

(3) ND = Not Detected (< MDL)

(4) "-" = Not Regulated

[redacted]

Test Method : With reference to IEC 62321:2008

(1) Determination of Cadmium by ICP-OES.

(2) Determination of Lead by ICP-OES.

(3) Determination of Mercury by ICP-OES.

(4) Determination of Hexavalent Chromium by Spot test / Colorimetric Method using UV-Vis.

Test Item(s)	Limit	Unit	MDL	*002*
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1,000	mg/kg	2	17
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (CrVI)	-	-	◇	Negative

Notes :

(1) The maximum permissible limit is quoted from the directive 2011/65/EU, Annex II

(2)◇Spot-test:

Negative = Absence of CrVI coating, Positive = Presence of CrVI coating;

(The tested sample should be further verified by boiling-water-extraction method if the spot test result is Negative or cannot be confirmed.)

◇Boiling-water-extraction:

Negative = Absence of CrVI coating

Positive = Presence of CrVI coating; the detected concentration in boiling-water-extraction solution is equal or greater than 0.02 mg/kg with 50 cm2 sample surface area.

For corrosion protection coatings on metals: Information on storage conditions and production date of the tested sample is unavailable and thus results of Cr(VI) represent status of the sample at the time of testing.

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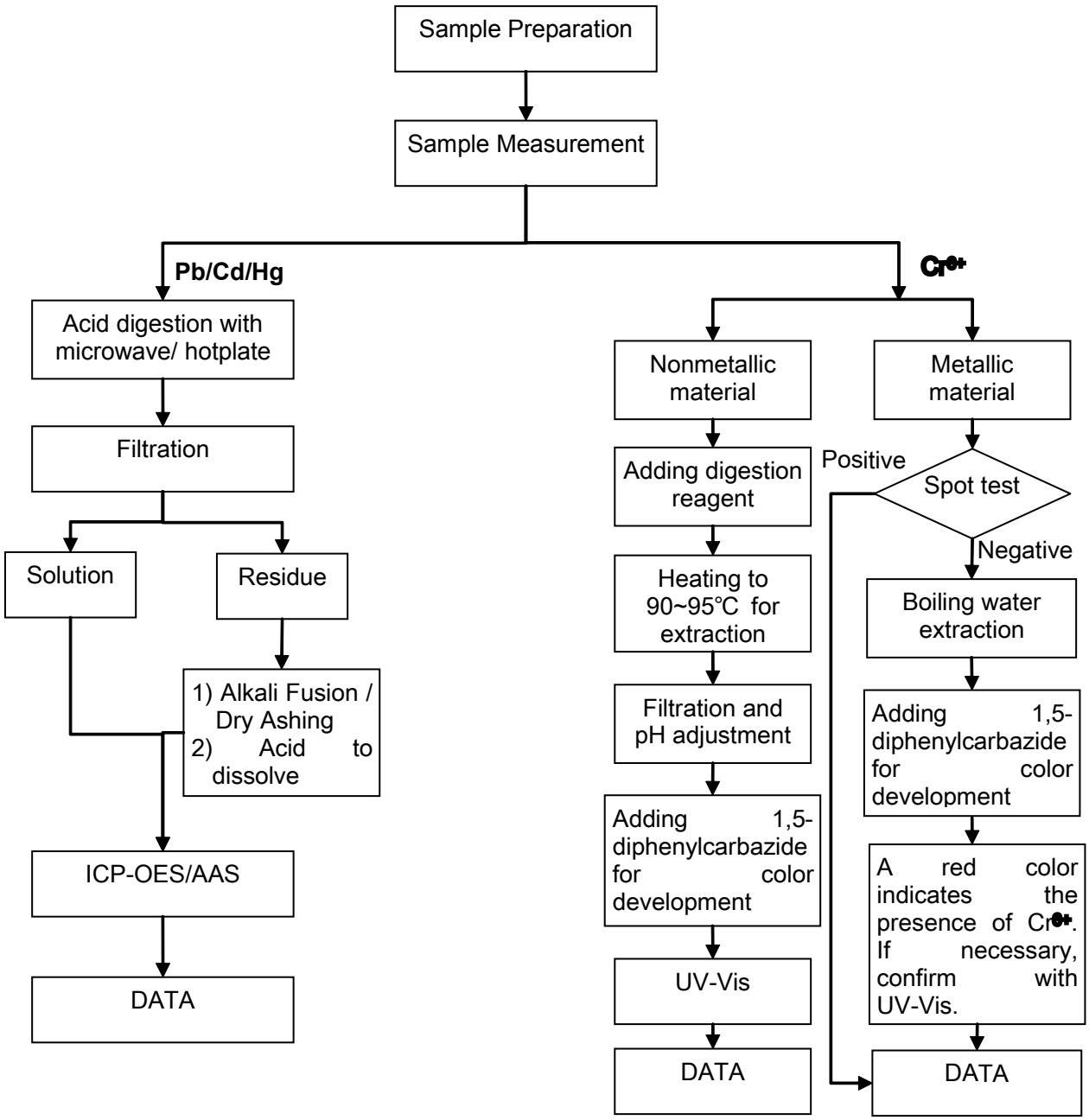
Member of the SGS Group (SGS SA)

ATTACHMENTS

RoHS Testing Flow Chart

1) Name of the person who made testing: Bella Wang
2) Name of the person in charge of testing: Adams Yu
3) These samples were dissolved totally by pre-conditioning method according to below flow chart (Cr6+ test method excluded).



Sample photo:

CAN12-093336.002

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SHENZHEN XIECHENG HARDWARE PLASTIC PRODUCT COMPANY

4 F,C RIDGEPOLE HEPING INDUSTRIAL ZONE,FENGTANG ROAD,FUYONG STREET,BAO`AN DISTRICT,SHENZHEN CITY, GUANDONG,CHINA

The following sample(s) was/were submitted and identified on behalf of the clients as : Gold plating layer

SGS Job No. :	CP12-033096 - SZ
Date of Sample Received :	12 Jul 2012
Testing Period :	12 Jul 2012 - 19 Jul 2012
Test Requested :	Selected test(s) as requested by client.
Test Method :	Please refer to next page(s).
Test Results :	Please refer to next page(s).
Conclusion :	Based on the performed tests on submitted samples, the results of Lead, Mercury, Cadmium, Hexavalent chromium comply with the limits as set by RoHS Directive 2011/65/EU Annex II; recasting 2002/95/EC.

Signed for and on behalf of
SGS-CSTC Ltd.

Almay Gao
Approved Signatory

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SGS

[redacted] No. CANEC1209333606 Date: 19 Jul 2012

Test Results :

Test Part Description :

[redacted]	[redacted]	[redacted]
1	CAN12-093336.001	Golden plated metal

Remarks :

(1) 1 mg/kg = 1 ppm = 0.0001%

(2) MDL = Method Detection Limit

(3) ND = Not Detected (< MDL)

(4) "-" = Not Regulated

[redacted]

Test Method : With reference to IEC 62321:2008
(1) Determination of Cadmium by ICP-OES.
(2) Determination of Lead by ICP-OES.
(3) Determination of Mercury by ICP-OES.
(4) Determination of Hexavalent Chromium by Spot test / Colorimetric Method using UV-Vis.

Test Item(s)	Limit	Unit	MDL	001
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1,000	mg/kg	2	16
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (CrVI)	-	-	◇	Negative

Notes :

(1) The maximum permissible limit is quoted from the directive 2011/65/EU, Annex II
(2)◇Spot-test:
Negative = Absence of CrVI coating, Positive = Presence of CrVI coating;
(The tested sample should be further verified by boiling-water-extraction method if the spot test result is Negative or cannot be confirmed.)
◇Boiling-water-extraction:
Negative = Absence of CrVI coating
Positive = Presence of CrVI coating; the detected concentration in boiling-water-extraction solution is equal or greater than 0.02 mg/kg with 50 cm2 sample surface area.
For corrosion protection coatings on metals: Information on storage conditions and production date of the tested sample is unavailable and thus results of Cr(VI) represent status of the sample at the time of testing.

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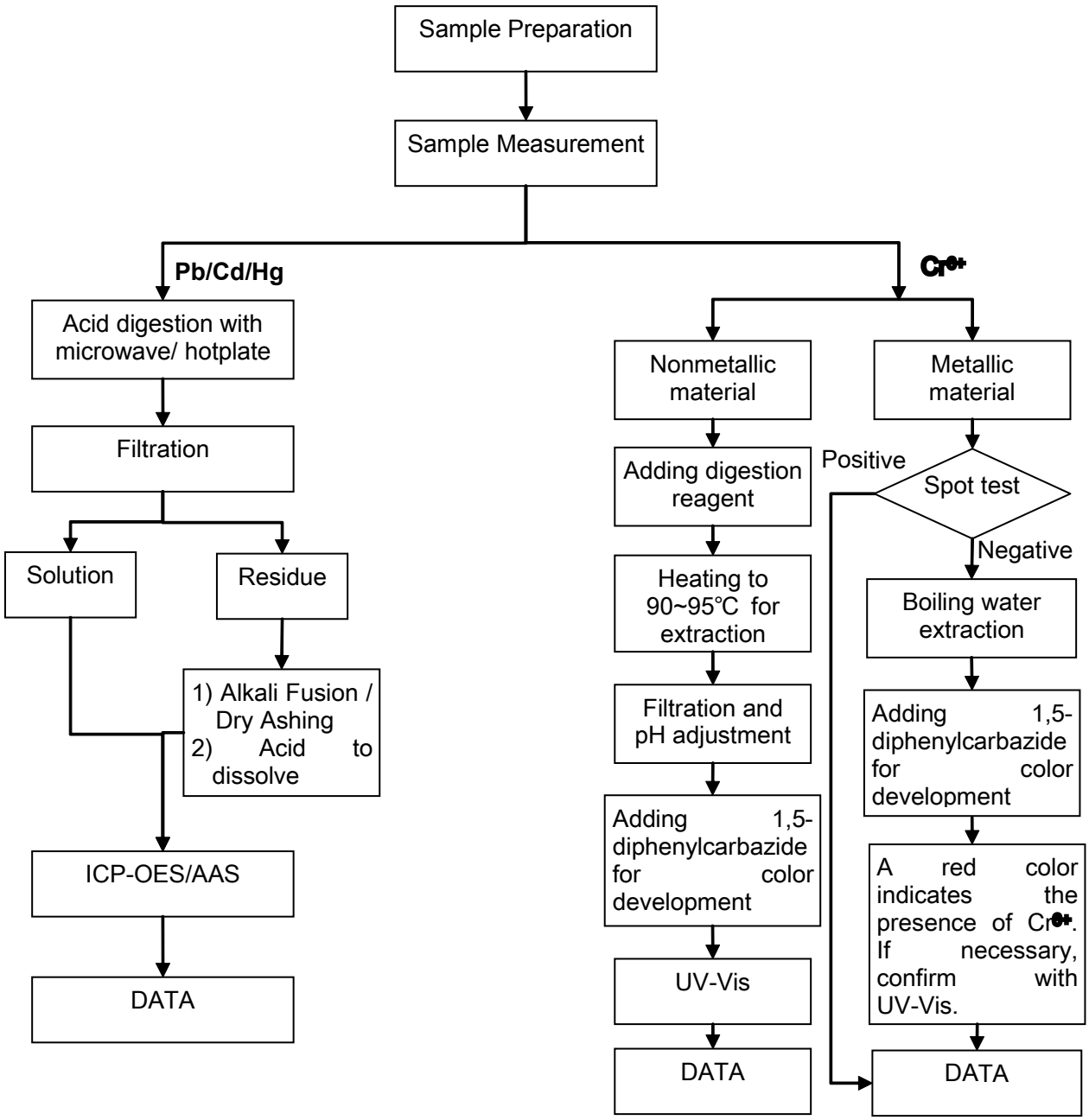
ATTACHMENTS

RoHS Testing Flow Chart

1) Name of the person who made testing: Bella Wang
2) Name of the person in charge of testing: Adams Yu
3) These samples were dissolved totally by pre-conditioning method according to below flow chart (Cr6+ test method excluded).



Sample photo:

CAN12-093336.001

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Member of the SGS Group (SGS SA)

SHENZHEN XIECHENG HARDWARE PLASTIC PRODUCT COMPANY

4 F,C RIDGEPOLE HEPING INDUSTRIAL ZONE,FENGTANG ROAD,FUYONG STREET,BAO`AN DISTRICT,SHENZHEN CITY, GUANDONG,CHINA

The following sample(s) was/were submitted and identified on behalf of the clients as : Bright tin plating layer

SGS Job No. :	CP12-033096 - SZ
Date of Sample Received :	12 Jul 2012
Testing Period :	12 Jul 2012 - 19 Jul 2012
Test Requested :	Selected test(s) as requested by client.
Test Method :	Please refer to next page(s).
Test Results :	Please refer to next page(s).
Conclusion :	Based on the performed tests on submitted samples, the results of Lead, Mercury, Cadmium, Hexavalent chromium comply with the limits as set by RoHS Directive 2011/65/EU Annex II; recasting 2002/95/EC.

Signed for and on behalf of
SGS-CSTC Ltd.

Almay Gao
Approved Signatory

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Test Results :

Test Part Description :

[redacted]	[redacted]	[redacted]
1	CAN12-093336.004	Silvery plated metal

Remarks :

(1) 1 mg/kg = 1 ppm = 0.0001%

(2) MDL = Method Detection Limit

(3) ND = Not Detected (< MDL)

(4) "-" = Not Regulated

[redacted]

Test Method : With reference to IEC 62321:2008

(1) Determination of Cadmium by ICP-OES.

(2) Determination of Lead by ICP-OES.

(3) Determination of Mercury by ICP-OES.

(4) Determination of Hexavalent Chromium by Spot test / Colorimetric Method using UV-Vis.

Test Item(s)	Limit	Unit	MDL	*004*
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1,000	mg/kg	2	10
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (CrVI)	-	-	◇	Negative

Notes :

(1) The maximum permissible limit is quoted from the directive 2011/65/EU, Annex II

(2)◇Spot-test:

Negative = Absence of CrVI coating, Positive = Presence of CrVI coating;

(The tested sample should be further verified by boiling-water-extraction method if the spot test result is Negative or cannot be confirmed.)

◇Boiling-water-extraction:

Negative = Absence of CrVI coating

Positive = Presence of CrVI coating; the detected concentration in boiling-water-extraction solution is equal or greater than 0.02 mg/kg with 50 cm2 sample surface area.

For corrosion protection coatings on metals: Information on storage conditions and production date of the tested sample is unavailable and thus results of Cr(VI) represent status of the sample at the time of testing.

SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Customs Technology Center Chemical Laboratory.
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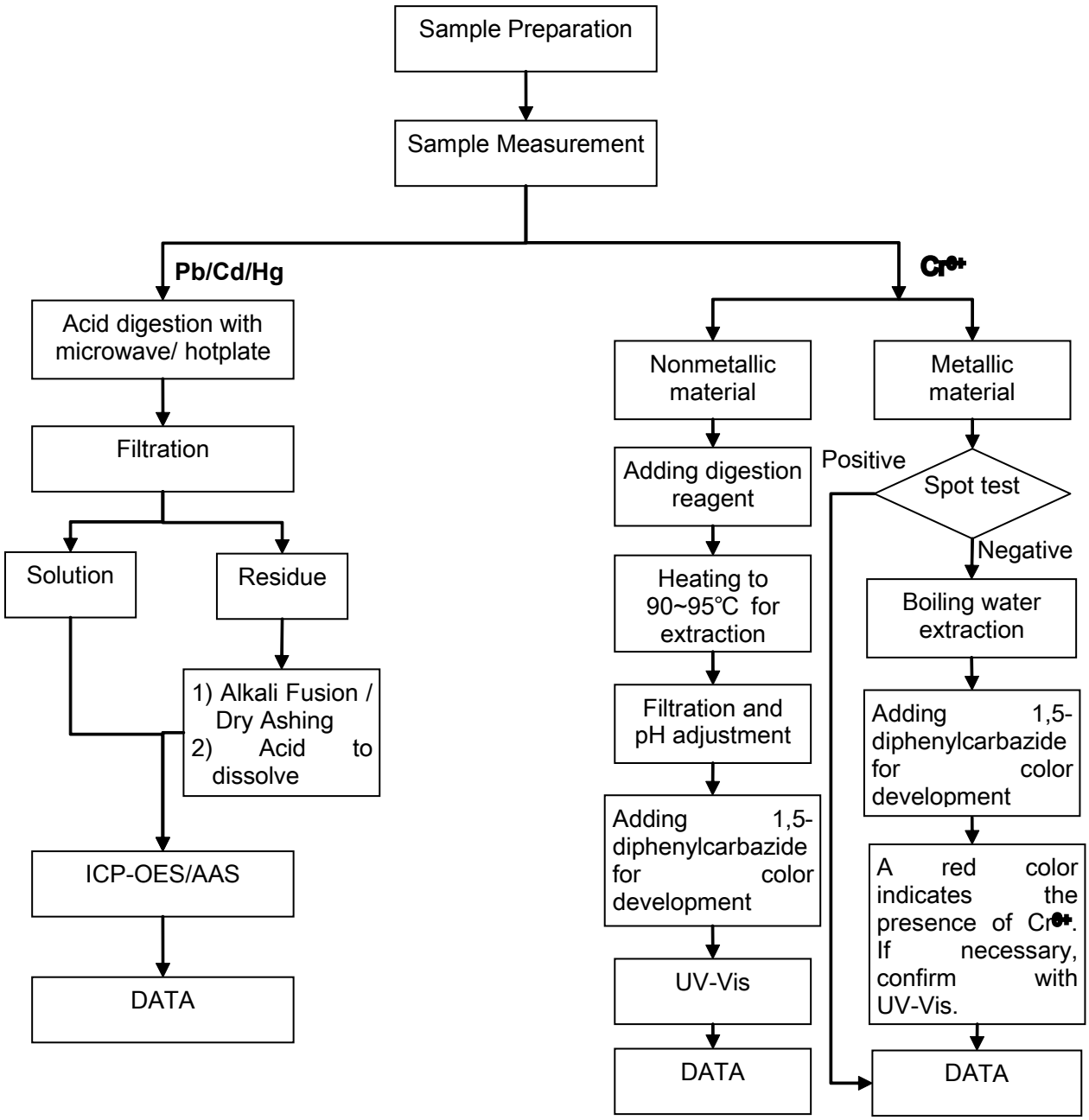
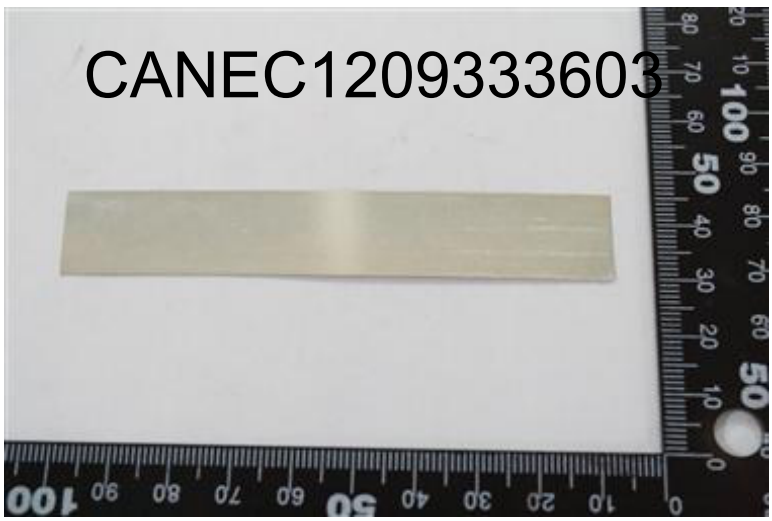
ATTACHMENTS

RoHS Testing Flow Chart

1) Name of the person who made testing: Bella Wang
2) Name of the person in charge of testing: Adams Yu
3) These samples were dissolved totally by pre-conditioning method according to below flow chart (Cr6+ test method excluded).



Sample photo:



CAN12-093336.004

SGS authenticate the photo on original report only

*** End of Report ***

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