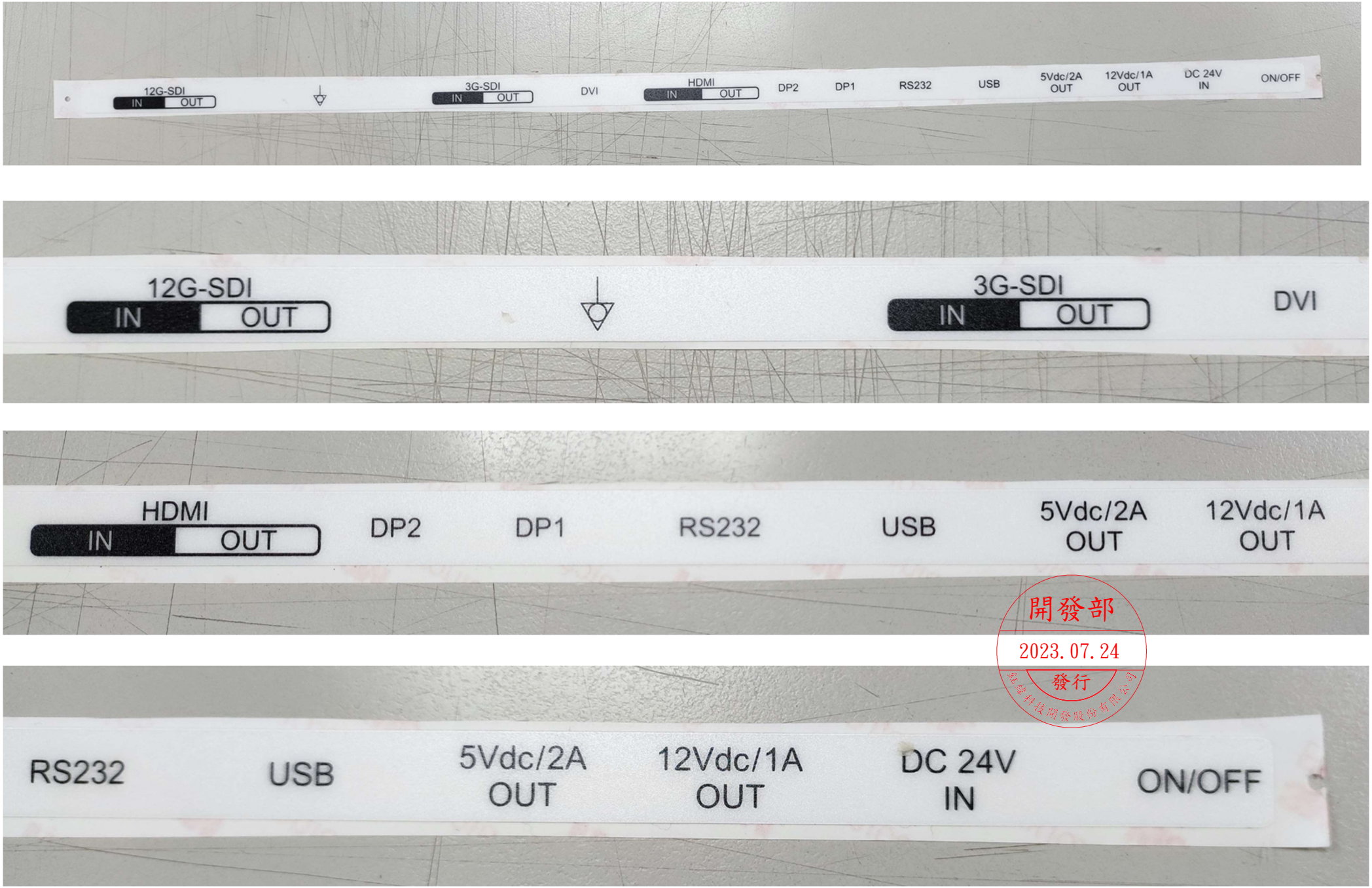

12G-SDI
IN
OUT
3G-SDI
IN
OUT
DVI
HDMI
IN
OUT
DP2
DP1
RS232
USB
5Vdc/2A
OUT
12Vdc/1A
OUT
DC 24V
IN
ON/OFF
開發部
2023.07.24
發行

承　　認　　書

SPECIFICATION　FOR　APPROVAL

客戶:鈺緯科技開發股份有限公司

品名:8A35 印刷單背 3M9448

規格:486mm*12mm*0.4T(含膠)

料號:3MD642FL010(M3460)

主 管	審 查	製 作
游鈺衡	游鈺崧	王瀞融

開發部
2023.07.24
發行
鈺緯科技開發股份有限公司

俐　元　企　業　股　份　有　限　公　司

俐　誠　企　業　股　份　有　限　公　司

LI YUN　ENTERPRISE CO., LTD.

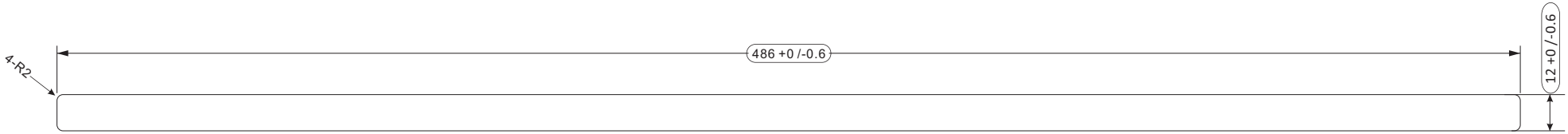
LI CHENG ENTERPRISE CO., LTD.

地 址 : 新 北 市 樹 林 區 三 龍 街 20-1 號

電話:(02)8688-8680　　傳真:(02)8688-8678

中　華　民　國 112 年 07 月 13 日

REV.	DATE	DESCRIPTION	BY	APVD





RUG2723CMII白 色(3MD642FL010）
Text color: Black
Background color: White
Font: Arial
SC27820

開發部
2023.07.24
發行
鈺鐘科技開發股份有限公司

Note:
1.材質 : MYLAR MATERIAL : E121562, SABIC, model 8A35,t=0.25mm
2.單面背膠 : MH15896, 3M, models Y9448H or Y9448HK, t=0.15mm
3.材質+背膠總厚度t=0.4mm±0.05mm
4.須符合RoHS
5.顏色、尺寸參照承認樣品
6.檢驗規範文件編號QWI-016

RANGE OF DIMENSION	TOLERANCE CLASS DESIGNATION		
	f	V m	c
UP TO 30	±0.10	±0.20	±0.50
ABOVE 30~120	±0.15	±0.30	±0.80
ABOVE 120~315	±0.20	±0.50	±1.20
ABOVE 315~1000	±0.30	±0.80	±2.00
ANGLE±1° (±1.75/100)			

THIRD ANGLE PROJECTION		UNITS: mm	SCALE: 1/1	SHEET1/1	MODEL NO.: SC27820
		MATERIAL:		TREATMENT:	
DSGD by	Albert	2023/06/20	PART NAME: I/O LABEL		
APVD by		2023/07/24	PART NO.:3MD642FL010		VER. 0
APVD NO.: M3460		FILE NAME: SC27820.cdr	DIVA Laboratories, Ltd.		

俐元企業股份有限公司
俐誠企業股份有限公司

成品出廠檢驗表

表單編號：FM-42A

客戶名稱	鈺緯科技開發股份有限公司	訂單號碼		交貨數量	
料號	3MD642FL010 (M3460)	品名規格	486mm*12mm*0.4T(含膠)	檢驗日期	

序號	規　格	檢　驗　值					檢驗結果	
	依客戶圖面檢驗	1	2	3	4	5	OK	NG
1	0.40 T ±0.05 mm	0.42	0.44	0.41	0.43	0.42	✓	
2	486.00 +0.00 −0.60 mm	485.71	485.72	485.70	485.69	485.68	✓	
3	12.00 +0.00 −0.60 mm	11.71	11.72	11.70	11.69	11.68	✓	
4								
5								
6								
7								
8								
9								
10								

主管：　游閔智　　品管組長：黃惠珍　　品檢員：林素后

PRODUCT DATASHEET
LEXAN™ 8A35 Film

DESCRIPTION

LEXAN 8A35 is a one side velvet, one side polished transparent polycarbonate film. It offers high temperature resistance, excellent dimensional stability, as well as good printability without pre- treatment making it very suitable for multi-layer printing for applications such as overlays, floor graphics, high-performance labels and in-mould decoration. It can be screen printed using traditional solvent based or water based inks, as well as UV or infrared drying inks and offers ease of processing for thermoforming, embossing, die-cutting, hydro-forming and bending. The velvet texture offers mar resistance, and can be used over light-emitting devices (LEDs).

TYPICAL PROPERTY VALUES◆

Property	ASTM Test Method	Units (USCS)	Value	ISO Test Method	Units (SI)	Value
Mechanical						
Tensile Strength @ Yield	ASTM D882	psi	8500	ISO 527	MPa	62
Ultimate	ASTM D882	psi	9000	ISO 527	MPa	65
Tensile Modulus	ASTM D882	psi	300000	ISO 527	MPa	2100
Tensile Elongation at Break	ASTM D882	%	100-160	ISO 527	%	100
Gardner Impact Strength at 0.03" (0.75 mm)	ASTM D3029	ft-lb	23	ISO 6603-1	J	31
Tear Strength						
Initiation	ASTM D1004	lb/mil	1.4-1.8		kN/m	245
Propagation	ASTM D1922	g/mil	30-55		kN/m	10-20
Puncture Resistance (Dynatup)	ASTM D3763	ft-lb	9		J	12
Fold Endurance (MIT)						
0.010" (0.25 mm)	ASTM D2176-69	double folds	130			
0.020" (0.50 mm)	ASTM D2176-69	double folds	35			
Thermal						
Coefficient of Thermal Conductivity	ASTM D5470	Btu/hr/ft2/°F/in	1.35		W/m°K	0.2
Coefficient of Thermal Expansion	ASTM E831	($x10^{-5}$/°F)	3.2	ISO 11359	($x10^{-5}$/°C)	7
Specific Heat @40°F (4°C)	ASTM E1269	Btu/lb/°F	0.3		KJ/Kg-°C	1.25
Glass Transition Temperature	ASTM D3417 / D3418	°F	307	ISO 11357	°C	153
Vicat Softening Temperature, B	ASTM 1525-00 modified	°F	323		°C	150
Heat Deflection Temp. by TMA at 1.8 Mpa		°F	290	ISO 75 Modified	°C	135
Brittleness Temperature	ASTM D746	°F	-211		°C	-135
Physical						
Density	ASTM D792	$slug/ft^3$	2.3	ISO 1183	kg/m^3	1200
Water Absorption, 24 hrs.	ASTM D570	% change	0.35	ISO 62	% change	0.35
Surface Roughness (RMS)	ASME B46-1	µ	55			
Surface Energy(1st surface/ 2nd surface)	ASTM D5946-01	-	34/34			
Surface Tension(1st surface/ 2nd surface)	Dyne Pens	Dyne	40-42/38-40			
Optical						
Refractive Index @77°F (25°C)	ASTM D542A	-	1.6			
Light Transmission	ASTM D1003	%	90			
Yellowness Index	ASTM D1925	%	0.9			
Haze	ASTM D1003	%	42			
Gloss over Flat Black min/max @ 60°	ASTM D523-60	-	See chart	ISO 2813	-	See chart
Electrical						
Dielectric Strength at 23°C in oil, short time, 250 micron				IEC 243-1	kV/mm	67
Relative Permittivity				IEC 250		
50 Hz					-	2.99
1 MHz					-	2.93
Dissipation Factor				IEC 250		
50 Hz					-	0.0009
1 MHz					-	0.010
Volume Resistivity				IEC 93	Ohm.cm	10^{15}
Surface Resistivity				IEC 93	Ohm	
Arc Resistance, Tungsten	ASTM D495	S	120			

PRODUCT DATASHEET
LEXAN™ 8A35 Film

◆ These are typical properties and are not intended for specification purposes. If minimum certifiable properties are required, Please contact your local SABIC representative or the SABIC Quality Services Department.
Reported Values are Based on 0.250 mm (0.010") Thickness unless otherwise noted.

™ Trademark of SABIC.

MANUFACTURING SPECIFICATIONS

Nominal Gauge Ranges	Min/Max Limit of Nominal
0.010-0.015" (0.250-0.375 mm)	± 5%
0.020" (0.500 mm)	± 3%

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F +1 (888) 443-2033
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T +86 21 62881088 ext. 6733
F +86 21 6288 0818

E-mail
sfscustomerservice@sabic-ip.com

Lexan* Polycarbonate Film

* Trademark of SABIC Innovative Plastics IP BV

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sabic-ip.com/sfs

3M

Technical Data Sheet

テープ及び関連製品

両面粘着テープ

Y-9448HK,Y-9448HKB

1. 概　　要: 両面粘着テープY-9448HKは、柔軟性に富む不織布基材の両面に接着性に優れたアクリル系感圧性粘着剤を塗布した工業用の両面貼り合わせ用テープです。
Y-9448HKBはY-9448HKの黒色タイプで、Y-9448HKと同等の性能を有しております。

2. 構　　造:



粘着剤: アクリル系
基材: 不織布(セルロース)
粘着剤: アクリル系
剥離紙: シリコーン処理平面紙

3. 特　　長:
(1)各種素材への接着性が優れる。
(2)P.P.やP.E.等の低表面エネルギープラスチックにも優れた接着力を有する。
(3)低温においても初期タックが低下しにくい。
(4)粗面への接着性が他のテープに比べ優れる。
(5)ダイカット(全抜き)、ハーフカット(半抜き)性に優れた剥離紙を使用。
(6)ギャッピング、テレスコ等のロール変形が起きにくい。

4. 用　　途:
(1)電子機器内のフィルム、発泡材、ゴム材などの取り付け用。
(2)家電製品のスイッチ、ディスプレイ部のデコレーションパネルの取り付け用。
(3)金属、プラスチック銘板の取り付け用。
(4)自動車、車輌用の内装下地材の固定。
(5)玩具、楽器、レジャー用品の緩衝材、すべり防止用ゴム材の取り付け。
(6)サインプレート、切り文字の仮固定用。

5. 一般特性:

製品番号		Y-9448HK	Y-9448HKB
色	テープ	無色半透明	黒
	剥離紙	白色平面紙(3Mロゴ入り)	
厚　み (mm)	テープ	0.150	
	剥離紙	0.120	
180度方向剥離力(N/cm)		5.88	
90度方向剥離力(N/cm)		4.41	
剪断接着力(N/cm²)		93	

＜試験方法＞
厚み:　直径5mmのﾀﾞｲﾔﾙｼｯｸﾈｽｹﾞｰｼﾞ使用。
180度方向剥離力:
対ｽﾃﾝﾚｽ(SUS 304)#280研磨面2kgﾛｰﾗｰ圧着1往復、20～40分放置後300mm/分で測定。
90度方向剥離力:
対ｽﾃﾝﾚｽ(SUS 304)BA仕上げ面2kgﾛｰﾗｰ圧着1往復、20～40分放置後300mm/分で測定。
剪断接着力:
対ｽﾃﾝﾚｽ(SUS 304)BA仕上げ面5kgﾛｰﾗｰ圧着1往復、24時間放置後300mm/分で測定。

6. 接着特性:

①被着体別90度方向剥離力 （単位:N/cm）

被着体	ステンレス(BA)	アルミニウム	アクリル	ポリエチレン	ポリプロピレン	ABS	ポリカーボネート	硬質塩ビ
Y-9448HK	4.41	5.00	5.53	2.16	2.82	6.59	5.10	7.84

試験方法: 2kgローラー1往復圧着、20～40分放置後300mm／分で測定。

②被着体別剪断接着力 （単位:N/cm²）

被着体	ステンレス(BA)	アルミニウム	アクリル	ポリエチレン	ポリプロピレン	ABS	ポリカーボネート	硬質塩ビ
Y-9448HK	92	107	122	70	97	121	130	141

試験方法: 5kgローラー1往復圧着、24時間放置後300mm/分で測定。

7. 温度別剪断接着力: （単位:N/cm²）

温度	5℃	23℃	50℃	75℃	100℃
Y-9448HK	181	92	44	21	11

試験方法: 対ステンレス(SUS 304)BA仕上げ面、5kgローラー1往復圧着、24時間放置後、各温度雰囲気下で充分養生後300mm/分で測定。

8. 剪断保持力: 落下又はずれ/25mmX25mm・2kg

条件	40℃	80℃
Y-9448HK	34分	9分

試験方法: 対ステンレス(SUS 304)＃280研磨面、2kgローラー1往復圧着、24時間放置後、各温度雰囲気下に1時間放置後2kg重りをかけ1時間後のずれ(mm)または落下までの時間を測定。

9．タック（3M法） **（単位：mm）**

温度	5℃	25℃
Y-9448HK	200	15

試験方法： ポリアセタール樹脂製の回転体をスロープの上から、平面上に糊面を露出させたテープの上へ転がし、停止した位置を、基点より測定する。

注　意　： 数値が小さい方がタックが高いことを意味する。

以上

注）本データーシートの測定データは全てSI単位系にて表記されております。他の単位系での数値が必要な場合は換算の上ご検討下さい。

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人がいる。夢がある。 3M

2022/11/9

明輝化工實業有限公司
MIN FEI CHEMICALS INDUSTRIES CO., LTD
新北市土城區大安路138巷32號
No.32, Ln.138, Da'an Rd., Thcheng Dist., New Taipei City
23673, Taiwan
TEL : (02) 2269 - 2527
FAX : (02) 2269 - 1802

PC 系列油墨

特性

✓ 印刷作業性優良，可進行精細印刷。
✓ 各色光澤均勻、細膩，特殊油墨遮蔽性高。
✓ 黏度低相溶性好，可節省調色時間。
✓ 調色安定性優，置久色差變化不大。

適用範圍

PC 底材、PVC 底材、ABS 底材、壓克力底材、射出底材。

使用方式

印刷前添加慢乾或快乾溶劑稀釋，比例為 10-20 %。

乾燥方式

70 ℃、15 分鐘（如後面需上背膠，需再放置 6 小時以上）
25 ℃、8-12 小時

皮膜物性

PC-W1 白油墨以 300 目之網版印刷至 PC 底材，以 70 ℃、120 秒乾燥後，室溫下靜置一天後進行試驗

試驗項目	試驗方法	結果
PC 密著性	十字錯紋膠帶剝離試驗	100/100 合格
PC 系列油墨屬於背面印刷，故未進行以下測試		
硬度	利百代 4H 硬度鉛筆	未測試
耐酒精性	以 99.5%酒精摩擦 50 次	未測試
耐鹼性	5%NaOH 水溶液中靜置 48 小時	未測試
耐酸性	5%H_2SO_4 水溶液中靜置 48 小時	未測試
耐摩擦性	以橡皮擦（Pentel 牌）摩擦 行程 70mm，往復 500 次	未測試

標準色與包裝

標準色 18 色，透明油 2 種，螢光色 6 色，金色 8 色，銀色 11 色，珍珠兩色，1-5 kg 裝。

保存期限 未開封保存一年，開封使用後半年。

注意事項 依印刷面積大小及遮光需求，有乾燥速度不同的白色、黑色、其

2022/11/9
他色、銀色各種規格。

ARTICLE SAFETY DATA SHEET

Print date: 17-Aug-2016 *Revision Number: 5* *Revision date: 17-Aug-2016*

1. IDENTIFICATION OF THE SUBSTANCE AND COMPANY

Trademark:	LEXAN™ Sheet LEXAN™ Film ILLUMINEX™ sheet GEPAX™ Sheet VEROLITE™ Sheet XYLEX™ Film LEXAN EXELL™ D sheet MARGARD™ sheet PLASTECH™ Sheet SOUNDGLAZE™ sheet SUNXP™ sheet THERMOCLEAR-PLUS™ sheet THERMOCLEAR™ sheet THERMOCLICK™ sheet THERMOROOF™ sheet CLINIWALL™ sheet CARBORON™ Sheet CRYSTALITE™ sheet
Product Code:	GEN-SFS-PC
Product Description:	Polycarbonate based film, sheet or strand
Product Type:	Commercial Product
Recommended use:	May be used as received, processed or thermoformed to produce other articles, or as a component of other industrial products.
Company:	-SABIC Japan LLC. Tokyo Club Building, 2-6 3Chome Kasumigaseki, Chiyoda-Ku Tokyo, 100-0013 Japan -SABIC Innovative Plastics (China) Ltd.or SABIC Innovative Plastics International Trading Shanghai Ltd. 2550 Xiupu Road, Pudong New Area, Shanghai 201319, China (Contact address) -SABIC Korea Ltd. 20F, Donghoon Building, 317, Teheran-ro, Seoul, Korea -SABIC Innovative Plastics Singapore Pte Ltd 23, Benoi Road, 629895 Singapore -SABIC Innovative Plastics (Thailand) Co. Ltd 64/22 Moo 4 Tumbol Pluak Daeng, Amphur Pluak Daeng,Rayong 21140 Thailand -SABIC Innovative Plastics India Ltd. Plastics Avenue, P.O. Jawaharnagar,District Vadodara 391320 India -SABIC Taiwan Holding Ltd, Taiwan Branch, Room B,7F,No. 8,Min-Sheng E. Rd. Sec. 3,Taipei City 10480 Taiwan -SABIC Innovative Plastics Hong Kong Limited. Flat/ RM 1701, Tower 1, the Gateway 25 Canton Road, Tsimshatsui, Hong Kong -SABIC Innovative Plastics (Aust.) Pty. Ltd. Suite 14, Building 3, 195 Wellington Road, Clayton, Victoria, Australia 3168
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Emergency Transportation/CHEMTREC (24 HOUR):	800 424-9300 (USA) +1 703-527-3887 (globally, outside USA)
E-mail:	Asiaproductinquiries@sabic.com
Website Address:	**www.sabic.com**

2. HAZARDS IDENTIFICATION

This product consists primarily of high molecular weight polymers which are not expected to be hazardous.

EMERGENCY OVERVIEW:

- Plastic film, sheet or strand
- Can burn in a fire creating dense, toxic smoke
- Molten plastic can cause severe thermal burns
- Fumes produced during melt processing may cause eye, skin, and respiratory tract irritation. Severe over-exposure may result in nausea, headache, chills, and fever. See below for additional effects.
- Secondary operations, such as grinding, sanding, or sawing can produce dust which may present an explosion or respiratory hazard.

HMIS Rating **Health:** 0 **Flammability:** 1 **Reactivity:** 0

Chronic/Carcinogenic Information

Chronic Toxicity: There are no toxicological hazards associated with this product.

Processing Issues: Processing vapors may cause irritation to the eyes, skin, and respiratory tract. In cases of severe exposure, nausea and headache can also occur. Grease-like processing vapor condensates on ventilation ductwork, molds, and other surfaces can cause irritation and injury to skin.

Aggravated Medical Conditions: MEDICAL RESTRICTIONS: There are no known health effects aggravated by exposure to this product. However, certain sensitive individuals and individuals with respiratory impairments may be affected by exposure to components in the processing vapors.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Product Type Article

This product consists primarily of high molecular weight polymers which are not expected to be hazardous.

4. FIRST AID MEASURES

If Inhalation: Move to fresh air in case of accidental inhalation of fumes from overheating or combustion. If symptoms persist, call a physician.

On skin contact: For hot product, immediately immerse in or flush affected area with large amounts of cold water to dissipate heat. Cover with clean cotton sheeting or gauze and get prompt medical attention.

On contact with eyes: Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. If eye irritation persists, consult a specialist.

On ingestion: No hazards which require special first aid measures.

Precautions: Processing vapors inhalation may be irritating to the respiratory tract. If symptoms are experienced remove victim from the source of contamination or move victim to fresh air and obtain medical advice.

5. FIRE-FIGHTING MEASURES

Autoignition Temperature: Not applicable

Explosive Limits

upper: Not applicable
lower: Not applicable

Suitable Extinguishing Media: Use dry chemical, CO2, water spray or "alcohol" foam. Water is the best extinguishing medium. Carbon dioxide and dry chemical are not generally recommended because their lack of cooling capacity may permit re-ignition on larger resin fires (blobs, drools, etc.).

Unsuitable Extinguishing Media for Safety Reasons: Do not use a solid water stream as it may scatter and spread fire.

Hazards from Combustion Products: Fire will produce dense black smoke containing hazardous combustion products, carbon oxides, hydrocarbon fragments.

Specific Hazards: Take precautionary measures against static discharges. Thermal decomposition can lead to release of irritating gases and vapors. Dust formed by operations such as cutting or grinding may form an explosive mixture in air.

Special Protective Equipment for Firefighters: Do not enter fire area without proper protection including self-contained breathing apparatus and full protective equipment. Fight fire from a safe distance and a protected location due to the potential of hazardous vapors and decomposition products.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: See section 8.

Environmental Precautions: Dispose of in compliance with all Federal, state and local laws and regulations.

Clean up: Gather and store in a closed container pending a recyclability or waste disposal evaluation.

7. HANDLING AND STORAGE

Handling: Handle in accordance with good industrial hygiene and safety practices Provide for appropriate exhaust ventilation and dust collection at machinery Avoid dust formation Accumulation of waste films, sheets and/or masking may create a slipping hazard

Storage: Keep away from heat sources and sources of ignition.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Measures to Reduce Exposure:	Handle in accordance with good industrial hygiene and safety practices. Processing fume condensate may be a fire hazard and toxic; remove periodically from exhaust hoods, ductwork, and other surfaces using appropriate personal protection.
Hand Protection:	Protective gloves should be worn
Eye Protection:	Safety glasses.
Respiratory Protection:	When using this product at elevated temperatures, implement engineering systems, administrative controls or a respiratory protection program (including a respirator approved for protection from organic vapors, acid, gases, and particulate matter) if processing vapors are not adequately controlled or operators experience symptoms of overexposure. If dust or powder are produced from secondary operations such as sawing or grinding, use a respirator approved for protection from dust.
Body Protection:	Long sleeved clothing
Hygiene Measures:	When using, do not eat, drink or smoke.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Solid
Appearance:	Sheet or film
Color:	Same as color code
Odor:	None or slight
Melting point/range:	This product does not exhibit a sharp melting point but softens gradually over a wide range of temperatures.
Autoignition Temperature:	Not applicable
Explosive Limits	
upper:	Not applicable
lower:	Not applicable

10. STABILITY AND REACTIVITY

Stability:	Stable.
Conditions to Avoid:	Do not exceed maximum temperatures recommended in the product literature.
Hazardous Decomposition Products:	Process vapors under recommended processing conditions may include trace levels of hydrocarbons, phenols, alkylphenols, diarylcarbonates.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Product Information:

Component Information:

Component Information Text: No data available

Other information on acute toxicity: There are no toxicological hazards associated with this product

Sensitization

Respiratory Sensitization: Not classified

Irritation:

Eye Irritation: no data available

Subchronic Toxicity (28 days)

Repeated Oral Toxicity(28d): No information available

Repeated Dermal Toxicity(28d): No Information available

Chronic Toxicity

Carcinogenicity: There are no known carcinogenic chemicals in this product above de minimus reporting levels, except as specifically mentioned below.

Mutagenic Effects: No data is available on the product itself

Reproductive Toxicity: No information available

Developmental Toxicity: No information available.

Neurological effects: No information available.

Specific Target Organ Toxicity(STOT)

Target Organ Effects: Not established.

Aspiration Hazard

Aspiration Hazard Statement: No data available

Other relevant toxicity information

Special Studies: No Information

12. ECOLOGICAL INFORMATION

Ecotoxicity

Component Information:

Product Information:

Other information: Ecological damages are not known or expected under normal use.

Persistence and Degradability

Biodegradation: Not inherently biodegradable

Partition coefficient (n-octanol/water) Not established.

Bioaccumulative Potential:

Bioaccumulation: Not established.

Mobility

Mobility: May be separated mechanically in waste water plants.

Other Adverse Effects

13. DISPOSAL CONSIDERATIONS

Waste from residues / unused products:	Where possible recycling is preferred to disposal or incineration. Dispose of in accordance with local regulations.
Waste Disposal:	Recycling is encouraged. Landfill or incinerate in accordance with federal, state and local requirements. Collected processing fume condensates and incinerator ash should be tested to determine waste classification.

14. TRANSPORT INFORMATION

Transport Classification:	Not regulated as hazardous for shipment, unless noted below, under current transportation guidelines.
IMO / IMDG	Not regulated
ICAO	Not regulated
IATA-DGR	Not regulated
DOT	Not regulated
ADR/RID	Not regulated
ADR	Not regulated
ADN	Not regulated

15. REGULATORY INFORMATION

International Inventories:
Film and sheet products are articles, exempt from registration or notification in those countries that have national chemical inventories.

CERCLA/SARA 311/312/313:
This product is a non-hazardous article and therefore not subject to the requirements of Title III of SARA (Emergency Planning and Community Right-To-Know Act).

Canada:
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all the information required by the CPR.

WHMIS hazard class:
Non-controlled, article

RoHS EU Directive 2011/65/EU:
This product is in compliance with the EU RoHS Directive 2002/95/EC. The following are not intentionally added during the manufacture of this product: a - cadmium and its compounds, b - lead and its compounds, c - mercury and its compounds, d - hexavalent chromium compounds, e - polybrominated biphenyls (PBBs), f - polybrominated diphenyl ethers (PBDEs, including Deca-BDE).

HMIS Rating
Health: 0
Flammability: 1
Reactivity: 0

16. OTHER INFORMATION

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Visit our public website to search, view and print Safety Data Sheets for commercial products:
http://eur.sabic-ip.com/ordeur/pages/msds/MSDSSearch.jsp?app=sabic-ip

SDS Scope:
Singapore: Conforms to Singapore workplace Safety and Health (WSH) Act, WSH Regulations, and GHS Standard 586
China: Conforms to Chinese Regulation on the Control over Safety of Hazardous Chemicals (Decree No 591) and GHS standards GB15258,GB13698,GB/T16483 etc.
Japan: Conforms to Industrial Safety and Health Law, Japan (2015) and Industrial GHS Standards JIS Z7253
Korea: Conforms to Industrial Safety & Health Act, Ministry of Labor, Korea
Taiwan: Conforms to Taiwan Rules on Hazard Communication and Labeling of Hazardous Substances, (Council of Labor Affairs, Taiwan) and GHS standards Z1051
Thailand: Conforms to Notification of the Ministry of Industry on the System of Classification and Hazard Communication of Hazardous Substances B.E. 2555 (2012)
Australia: National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC:2011 (2003)]
This document is also applicable in other countries and regions.

Prepared by: Product Stewardship & Toxicology

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End of Safety Data Sheet

安全資料表

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此安全資料表（SDS）是根據客戶要求提供的。 依據勞動部《危害性化學品標示及通識規則》本產品不適用本規則，因此不需要製作安全資料表。因為在按照建議或正常條件下使用時，本產品不會造成健康和安全上的危害。但是不按照產品建議、正常條件下使用或加工產品可能會影響產品性能，並可能存在潛在健康和安全危害。

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本安全資料表依據“危害性化學品標示及通識規則”編制

一 化學品與廠商資料

1.1. 化學品名稱
9448HK & 9448HKB Double Coated Tissue Tape, Black

其他名稱：無

產品識別號碼
XT-0021-0519-2　　XT-0021-9322-2　　XT-0021-9323-0　　XT-0021-9324-8

1.2. 建議用途及限制使用

推薦用途
貼合

1.3. 製造者、輸入者或供應者名稱、地址及電話

名稱：	台灣明尼蘇達礦業製造股份有限公司
地址：	11568台北市南港區經貿二路198號3樓
聯繫電話號碼：	(02) 2785-9338
網址：	www.3m.com.tw

1.4. 緊急聯絡電話/傳真電話
緊急聯絡電話號碼：886-3-4783600
傳真號碼：(03) 475-0924, 475-0904

二 危害辨識資料

2.1. 化學品危害分類
該產品被視為是一種成品，並豁免進行化學品全球調和制度(GHS)分類

2.2. 標示內容

警示語
不適用

象徵符號
不適用

危害圖示
不適用

2.3. 其他危害

未知

三 成分辨識資料

純物質： 不適用

本產品為混合物

化學性質：參見本 SDS 第 9 節

危害成分之中英文名稱		化學文摘社登記號碼 (CAS No.)	濃度或濃度範圍(成分百分比)
黏合劑：丙烯酸酯聚合物	ADHESIVE: Acrylate Polymer	商業秘密	89 - 94
基材：纖維紙	CARRIER: Tissue Paper	商業秘密	6 - 11

其他成分之中英文名稱		化學文摘社登記號碼 (CAS No.)	濃度或濃度範圍(成分百分比)
黏合劑：丙烯酸酯聚合物	ADHESIVE: Acrylate Polymer	商業秘密	89 - 94
基材：纖維紙	CARRIER: Tissue Paper	商業秘密	6 - 11

*根據CNS 15030其他成分表中成分為：1) 不屬於危害成分，或 2) 不造成化學品危害分類貢獻的成分。

四 急救措施

4.1. 不同暴露途徑之急救方法

吸入：
預計無需急救。

皮膚接觸：
以肥皂和水清洗。如果徵兆/症狀持續，則立即就醫。

眼睛接觸：
預計無需急救。

食入：
以漱口。如果感覺不適，則立即就醫。

4.2. 最重要症狀及危害效應
沒有嚴重的症狀或影響。 參見第11.1節，毒理作用資訊。

4.3. 對急救人員之防護
請參閱本安全資料表其他部分的信息，對身體和健康危害，呼吸防護，通風和個人防護設備。

4.4. 對醫師之提示
不適用

五 滅火措施

5.1. 適用滅火劑
著火時：使用適用於普通可燃物質（例如水或泡沫）的滅火劑撲滅。

5.2. 滅火時可能遭遇之特殊危害
此產品無固有特性

危害的分解物或副產品

物質	條件
醛類	在燃燒過程中
碳氫化合物	在燃燒過程中
一氧化碳	在燃燒過程中
二氧化碳	在燃燒過程中
酮類	在燃燒過程中

5.3. 特殊滅火程序
針對消防員沒有特殊的保護措施

5.4. 消防人員之特殊防護設備
無可用資訊

六 洩漏處理方法

6.1. 個人應注意事項
不適用

6.2. 環境注意事項
不適用

6.3. 清理方法
不適用

七 安全處置與儲存方法

7.1. 處置
此產品可視為製成品,在正常條件下不會釋放或導至有害化學品暴露

7.2. 儲存
不適用

八 暴露預防措施

8.1. 控制參數

八小時日時量平均容許濃度/短時間時量平均容許濃度/最高容許濃度
在本安全資料表第3節中所列之成分皆無職業暴露限值。

生物指標
在本安全資料表第3節中所列之成分皆無生物指標值。

8.2. 暴露控制

8.2.1. 工程控制
不適用

8.2.2. 個人防護設備(PPE)

眼睛/臉部防護

無需眼睛防護。

皮膚及身體/手部防護
無需化學防護手套。

呼吸防護

無需呼吸系統防護。

8.3. 衛生措施
見7.1節安全處理的注意事項

九 物理及化學性質

9.1. 基本的物性和化性相關資料

物質狀態	固體
顏色	黑色, 白色
氣味	輕微的丙烯酸氣味
嗅覺閾值	*不適用*
pH值	*不適用*
熔點/凝固點	*不適用*

沸點/初沸點/沸點範圍	*不適用*
閃火點	*不適用*
揮發速率	*不適用*
易燃性（固體、氣體）	未歸類。
爆炸界限（LEL）	*不適用*
爆炸界限（UEL）	*不適用*
蒸氣壓	*不適用*
蒸氣密度	*不適用*
相對密度	0.9 [*參考標準：*水= 1]
溶解度	*零*
溶解度 - 非水	*不適用*
辛醇/水分配係數（log Kow）	*無可用數據*
自燃溫度	*不適用*
分解溫度	*不適用*
黏度	*不適用*
可揮發比例	0 %

第10節：安定性及反應性

10.1. 反應性
在正常使用條件下，該材料被視為非反應性的

10.2. 安定性
穩定。

10.3. 特殊狀況下可能之危害反應
不會發生危害的聚合反應。

10.4. 應避免之狀況
無

10.5. 應避免之物質
無

10.6. 危害分解物

物質	**條件**
無	

關於燃燒過程產生的危害分解物，請參閱第5.2節

在建議的使用條件下，不會有危害的分解物。 氧化、加熱、或與其他物質發生反應有可能產生有危害的分解物。

十一 毒性資料

以下資料可能與第2節的材料分類不一致，如果特定成分分類是由主管機關授權時。此外，成分的毒理學數據可能不會予以反映在材料分類和/或暴露的徵兆和症狀中，如果一種成分含量低於應標示值以下、一種成分可能不會暴露或該資料可能與整體材料無關時。

11.1. 毒理學影響相關資料

暴露途徑/症狀

根據成份上的試驗數據和/或資料得知，這種材料可能會對健康產生以下影響：

吸入：
沒有已知的健康影響。

皮膚接觸：
機械性皮膚刺激：徵兆/症狀可能包括擦傷，紅腫，疼痛和瘙癢。

眼睛接觸：
不會影響健康。

吞食：
不會影響健康。　身體堵塞：徵兆/症狀包括腹部絞痛，腹痛，便秘等。

慢毒性或長期毒性

毒理學資料
如果某一個組成被公開在第3節，但沒有出現在下列表格中，代表現階段沒有數據可用或該或數據不足以進行分類。

急毒性

名稱	暴露途徑	種類	數值
整體產品	吞食		無可用數據，計算ATE>5,000 毫克/公斤

ATE = 急毒性估計值

皮膚腐蝕/刺激
關於成分，目前沒有數據或可用數據，不足以進行分類。

嚴重眼睛傷害/刺激
關於成分，目前沒有數據或可用數據，不足以進行分類。

皮膚致敏性
關於成分，目前沒有數據或可用數據，不足以進行分類。

呼吸過敏性
關於成分，目前沒有數據或可用數據，不足以進行分類。

生殖細胞致突變性
關於成分，目前沒有數據或可用數據，不足以進行分類。

致癌性
關於成分，目前沒有數據或可用數據，不足以進行分類。

生殖毒性

生殖和/或生長發育的影響

關於成分，目前沒有數據或可用數據，不足以進行分類。

標的器官

特定標的器官毒性 - 單次暴露
關於成分，目前沒有數據或可用數據，不足以進行分類。

特定標的器官毒性 - 重複暴露
關於成分，目前沒有數據或可用數據，不足以進行分類。

吸入性危害物質
關於成分，目前沒有數據或可用數據，不足以進行分類。

本材料和/或其成分的其他毒理學資料，請洽該安全資料表第一頁上所列的地址或電話號碼。

十二 生態資料

以下資料可能與第2節的材料分類不一致，如果特定成分分類是由主管機關授權時。第2節中材料分類相關的其他資料可依照要求提供。此外，成分的環境結果和影響數據可能不會予以反映在本節，因為一種成分含量低於應標示值以下、一種成分可能不會暴露或該資料可能與整體材料無關時。

12.1. 生態毒性

急性水生生物危害：
根據GHS標準 ，對水生生物無急性毒性。

慢性水生危害：
根據GHS標準 ，對水生生物無慢性毒性。

無可用的產品測試數據

12.2. 持久性及降解性
無可用的測試數據

12.3. 生物蓄積性
無可用的測試數據

12.4. 土壤中之流動性
更多詳細資料，請聯繫製造商

12.5. 其他不良效應
無可用資料。

十三 廢棄處置方法

13.1. 廢棄處置方法
按照地方/地區/國家/國際規定處理內裝物/容器。

在廢棄處置前，查詢所有適用的政府法規，以確保正確分類。 在許可工業廢棄物處理設施中進行廢棄產品的處理。 如為拋棄式替代品時，在許可廢棄物焚化爐中進行焚燒。 適當破壞可能需要在焚化過程中使用額外燃料。 如果無其他處理辦法可用情況下，可將廢棄產品放置在針對工業廢棄物所妥善設計的垃圾掩埋場中。

十四 運送資料

14.1. 國際法規
運輸尚無危害性。

聯合國編號： 不適用
聯合國運輸名稱： 不適用
運輸危害分類 (IMO)： 不適用
運輸危害分類 (IATA)： 不適用
包裝類別： 不適用
海洋污染物（是／否）： 不適用
特殊運送方法及注意事項： 不適用

十五 法規資料

15.1. 專屬於該物質或混合物的安全、健康和環境的規定/法規

適用法規：
事業廢棄物貯存清除處理方法及設施標準

職業安全衛生法
道路交通安全規則
危害性化學品標示及通識規則

15.2. 全球化學品註冊狀況
加拿大國內物資清單: 化學物質清單不適用
美國毒性物質管理法: 化學物質清單不適用

十六 其他資料

16.1. 參考文獻

製表單位
名稱： 台灣明尼蘇達礦業製造股份有限公司
地址： 11568台北市南港區經貿二路198號3樓
電話： 886 3 478 3600 #388

製表人
職稱： 資深產品支援工程師
名稱： 張建文

製表日期
2022/06/06

版本資料：
第1節：緊急聯絡電話號碼 資料已修改.
第3節：成分表濃度或濃度範圍(成分百分比)標題 資訊已加入.
第3節：成分表化學文摘社登記號碼(CAS No.)標題 資訊已加入.
第3節：成分辨識資料 信息已被刪除.
第4節：毒理作用資訊 信息已被刪除.
第5節：火 - 滅火劑訊息 資料已修改.
第9節：沸點/初始沸點/沸騰範圍 資料已修改.
第9節：顏色 資訊已加入.
第9節：氣味 資訊已加入.
第9節：氣味，顏色，等級資訊 信息已被刪除.
第11節：急毒性表 資料已修改.
第12節：急性水生生物危害信息 資料已修改.
第12節：慢性水生的危害資料 資料已修改.
第15節：適用法規 資料已修改.
第15節：全球化學品註冊狀況 資料已修改.
第15節：方法和設施標準 資料已修改.
第16節：免責聲明 信息已被刪除.
第3節：成分表 資訊已加入.
第3節：其他成分表 資訊已加入.
第3節：混合物 資訊已加入.
第3節：其他成分聲明 資訊已加入.
第3節：純物質 資訊已加入.

免責聲明：本安全資料表上的資料是根據我們的經驗而來，且就我們在公告日期的最佳知識所知為正確的，不過我們並不承擔任何其使用所導致的任何損失、傷害或受傷(法律規定者除外)。本資料並不適用於本安全資料表中未提及的任何其他用途，或將該產品結合其他材料的用途。由於這些原因，因此很重要的是由客戶進行自己滿意的測試，以便於讓該產品適用性適於自己企圖的應用上。

3M台灣安全資料表（SDS）www.3m.com.tw

安全資料表

一、化學品與廠商資料

化學品名稱：PC系列白色油墨
其他名稱：-
建議用途及限制使用：網版印刷用
製造者、輸入者或供應者名稱電話：明輝化工實業有限公司 地址：新北市土城區大安路138巷32號 電話：(02)2269-2527
緊急聯絡電話：(02)2269-2527 傳真電話：(02)2269-1802

二、危害辨識資料

化學品危害分類： 易燃液體第4級 急毒性物質(吞食)第4級 急毒性物質(皮膚)第4級 急毒性物質(吸入)第4級 腐蝕/刺激皮膚物質第2級 嚴重損傷/刺激眼睛物質第1級 致癌物質第2級 特定標的器官系統毒性物質～單一暴露呼吸道刺激第3級
標示內容：  象徵符號：驚嘆號、腐蝕、健康危害 警示語：危險 危險警告訊息： H227 可燃液體 H302 吞食有害 H312 皮膚接觸有害 H332 吸入有害 H315 造成皮膚刺激 H318 造成嚴重眼睛損傷 H351 懷疑致癌 H335 可能造成呼吸系統刺激 危險防範措施：勿吸入氣體/煙氣/蒸氣/霧氣、只能使用於通風良好的地方、穿戴適當的防護衣物、手套、戴眼罩/護面罩
其他危害：-

三、成分辨識資料

混合物：

化學性質：	
危害成分之中英文名稱	濃度或濃度範圍(成分百分比)
異佛爾酮Isophorone (CAS No. 78-59-1)	35-40
樹脂Resin (CAS No. 25767-39-9)	30-35
顏料Pigment (CAS No. 13463-67-7)	35-40

四、急救措施

不同暴露途徑之急救方法：

吸　　入：1.此物質是易燃的，救援前先採取適當措施（如移除任何汙染源）。2.移走污染源或將患者移到空氣新鮮處。3.若呼吸停止立即由受訓過的人施以人工呼吸；若心跳停止施行心肺復甦術。4.立即就醫。

皮膚接觸：1.立即以緩和的刷掉或吸掉多餘的化學品。2.用水和非磨砂性肥皂徹底緩和的清洗，至少15 分鐘或直到汙染物去除。3.沖水時脫掉污染的衣服、鞋子以及皮飾品（如錶帶、皮帶）。4.若沖洗後仍有刺激感，立即就醫。

眼睛接觸：1.立即以緩和的刷掉或吸掉多餘的化學品。2.立即將眼皮撐開，用緩和的流動的溫水沖洗污染的眼睛，至少15分鐘或直到汙染源去除。3.立即就醫。

食　　入：1.若患者即將喪失意識、已失去意識或痙攣，不可經口餵食任何東西。2.若患者意識清楚，讓其用水徹底漱口。3.不可催吐。4.給患者喝下240-300 毫升的水。5.若患者自發性嘔吐，讓其身體向前傾以減低吸入危險，並讓其漱口及反覆給水。6.立即就醫。

最重要症狀及危害效應：該物質若被吸入肺部，會導致肺部刺激（化學性支氣管炎）或死亡。

對急救人員之防護：應穿著C級防護裝備在安全區實施急救。

對醫師之提示：吞食時，考慮洗胃、活性碳。

五、滅火措施

適用滅火劑：化學乾粉、泡沫、二氧化碳

滅火時可能遭遇之特殊危害：1.蒸氣比空氣重，會傳播至遠處，遇火源可能造成回火。2.液體會浮於水上，而將火勢蔓延開。3.火場中可能釋出毒氣。4.火場中容器可能會爆炸。

特殊滅火程序：1. 以水霧冷卻暴露火場的貯槽或容器。2.以水霧滅火可能無效，除非消防人員受過各種易燃液體之滅火訓練。3.如果溢漏未引燃，噴水霧以分散蒸氣並保護試圖止漏的人員。4.噴水將外洩物沖離引燃源。5.消防人員必須配戴正壓空氣呼吸器（自攜式呼吸防護具）

消防人員之特殊防護設備：配帶空氣呼吸器及防護手套、消防衣。

六、洩漏處理方法

個人應注意事項：1.在污染區尚未完全清理乾淨前，限制人員接近該區。2.確定清理工作是由受過訓練的人員負責。3.穿戴適當的個人防護裝備。

環境注意事項：1.對該區域進行通風換氣。2.撲滅或除去所有發火源。3.通知政府安全衛生與環保相關單位。

清理方法：1.不要碰觸外洩物。2.避免外洩物進入下水道或密閉的空間內。3.在安全許可的情形下，設法阻止或減少溢漏。4.用不會和外洩物反應的泥土、沙或類似穩定且不可燃的物質圍堵外洩物。5.少量洩漏時，用不會和外洩物反應之吸收劑吸收。以污染的吸收劑和外洩物具有同樣的危害性，須置於加蓋並標示的適當容器裡。用水沖洗溢漏區域。6.大量溢漏時：聯絡消防、緊急處理單位及供應商以尋求協助。

七、安全處置與儲存方法

處置：1.此物質是易燃性和毒性液體，處置時工程控制應運轉及善用個人防護設備(關於個人防護裝備請參照「八、暴露預防措施」)；工作人員應受適當有關物質之危險性及安全使用法之訓練。2.除去所有發火源並遠離熱、可燃物及不相容物。3.工作區應有"禁止抽菸"標誌。4.液體會累積電荷，考慮額外之設計以增加電導性。如所有桶槽、轉裝容器和管線都要接地，接地時必須接觸到裸金屬，輸送操作中，應降

低流速，增加操作時間，增加液體留在管線中之時間或低溫操作。5.當調配之操作不是在密閉系統進行時，確保調配的容器和接收的運送設備和容器要等電位連接。6.空的桶槽、容器和管線可能仍有具危害性的殘留物，未清理前不得從事任何焊接、切割、鑽孔或其它熱的工作進行。7.桶槽或貯存容器可充填惰性氣體以減少火災和爆炸的危險。8.作業場所使用不產生火花的通風系統，設備應為防爆型。9.保持走道和出口暢通無阻。10.貯存區和大量操作的區域，考慮安裝溢漏和火災偵測系統及適當的自動消防系統或足夠且可用的緊急處理裝置。11.作業避免產生霧滴或蒸氣，在通風良好的指定區內操作並採最小使用量，操作區與貯存區分開。12.不要與不相容物一起使用（如強氧化劑）以免增加火災和爆炸的危險。13.使用相容物質製成的貯存容器，分裝時小心不要噴灑出來。14.不要以空氣或惰性氣體將液體自容器中加壓而輸送出來。15.除非調配區以耐火結構隔離，否則不要在貯存區進行調配工作。16.使用經認可的易燃性液體貯存容器和調配設備。17.不要將受污染的液體倒回原貯存容器。18.容器要標示，不使用時保持緊密並避免堆積和受損。
儲存：1.貯存在陰涼、乾燥、通風良好以及陽光無法直接照射的地方，遠離熱源、發火源及不相容物。2.遵循相關法規貯存與處理易燃性物質。3.門口設斜坡或門檻或挖溝槽使洩漏物可排放至安全的地方。4.貯存區應標示清楚，無障礙物並允許指定或受過訓的人員進入。5.貯存區與工作區應分開；遠離升降機、建築物、房間出口或主要通道貯存。6.貯存區附近應有適當的滅火劑和清理溢漏設備。7.檢查所有新進容器是否適當標示並無破損。8.限量貯存。9.以相容物質製成的貯存容器。10.空的容器應與貯存區分開。11.貯桶接地並與其它設備等電位連接。12.避免大量貯存於室內，儘可能貯存於隔離的防火建築。13.貯槽之排氣管應加裝火焰防止裝置。14.貯槽須為地面貯槽，底部整個區域應封住以防滲漏，周圍須有能圍堵整個容量之防液堤。

八、暴露預防措施

工程控制：1.單獨使用不產生火花、接地的通風系統。2.排氣口直接通到室外，並採取保護環境的重要措施。3.供給充分新鮮空氣以補充排氣系統抽出的空氣。
控制參數： 八小時日時量平均容許濃度：20 ppm 短時間時量平均容許濃度：- 最高容許濃度：- 生物指標：-
個人防護設備： 呼吸防護：1.750 ppm 以下：含有機蒸氣濾罐之化學濾罐式或動力型空氣淨化式呼吸防護具，供氧式呼吸防護具，全面型自攜式或供氣式呼吸防護具、含有機蒸氣濾毒罐之防毒面罩。2.未知濃度或IDLH 情況：正壓全面型空氣呼吸器（自攜式呼吸防護具SCBA）或正壓全面型供氣式呼吸防護具與輔助型正壓空氣呼吸器（自攜式呼吸防護具SCBA）一起使用。3.逃生：含有機蒸氣濾罐之氣體面罩或逃生型空氣呼吸器（自攜式呼吸防護具SCBA）。 手部防護：丁基橡膠、腈類橡膠、Viton、4H、CPF3、Responder 等材質的防滲手套。 眼睛防護：1.化學安全護目鏡。2.面罩。 皮膚及身體防護： 1.連身式防護衣。2.工作鞋。3.工作區要有淋浴/沖眼設備。
衛生措施：-

九、物理及化學性質

外觀（物質狀態、顏色等）：不透明膏狀	氣味：淡香
嗅覺閾值：1-500ppm(偵測)、8-50 ppm(覺察)	熔點：-

pH值：-	沸點/沸點範圍：212 ℃
易燃性（固體、氣體）：-	閃火點：75 ℃
分解溫度：-	測試方法（開杯或閉杯）：閉杯
自燃溫度：354 ℃	爆炸界限：1.5-7.0%
蒸氣壓：3.8 mmHg@22.3 ℃	蒸氣密度：4.6 （空氣=1）
密度：0.962 （水＝1）	溶解度：10 g/100 mL（水）
辛醇／水分配係數(log Kow)：0.15	揮發速率：0.7（乙酸丁酯=1）

十、安定性及反應性

安定性：正常狀況下安定
特殊狀況下可能之危害反應：1.強氧化劑（如過氧化物、硝酸鹽、過氯酸鹽）：可能引起火災及爆炸
應避免之狀況：熱、明火、靜電、火焰、引火源。
應避免之物質： 1.強氧化劑（如過氧化物、硝酸鹽、過氯酸鹽）。
危害分解物：-

十一、毒性資料

暴露途徑：吸入、皮膚接觸、眼睛接觸、食入
症狀：噁心、頭痛、暈眩、疲勞、噁心、酒醉感、皮膚炎
急毒性： 吸　　入：1.暴露於10000 ppm 6 分鐘或2000ppm 4 分鐘，引起輕微暈眩，5000ppm 4分鐘，導致明顯的暈眩，無法直線行走，不行蹣跚和肌肉不協調，但無眼部疼痛或鼻子、喉嚨刺激性。2.高濃度會引起黏膜的刺激，曝露5000ppm 15分鐘，會使某些人昏睡持續30 分鐘之久，持續曝露數個小時會產生噁心、食慾不振、汽油味等身體不適。3.致命的濃度為16000ppm。 皮膚接觸：1.簡略的接觸，無刺激性。2.長時間接觸（1-5 小時），會產生紅和發炎。 眼睛接觸：1.高濃度蒸氣會引起輕微刺激。2.液體機接觸會引起暫時性刺激和疼痛。 食　　入：1.食入會引起噁心、嘔吐、腹部腫脹、頭痛和抑鬱。2.吞食的毒性低，除非液體吸入肺部。吸入為吞食或嘔吐時，該物質被吸入肺部，會導致肺部刺激（化學性支氣管炎）、肺部組織受損（肺水腫）或死亡。 LD50（測試動物、曝露途徑）：2000 mg/kg (雄鼠，吞食) LC50（測試動物、曝露途徑）：800 mg/L - 8小時 (雌鼠,吸入)
慢毒性或長期毒性：1.皮膚長期接觸，會引起皮膚刺激和皮膚炎（發炎、紅、腫脹）。2.曝露於0.75-1000 ppm 達1-5 年可能引起血液混亂。

十二、生態資料

生態毒性： LC50(魚類)：120 mg/L - 24 小時 EC50(水生無脊椎動物)：- 生物濃縮係數(BCF)：-
持久性及降解性： 1.4 次實驗解果顯示,異丙醇於污水中五天(20℃)後可分解58%的BOD 理論值. 2.當釋放至水中,預期會蒸發(估計其半衰期為5.4天)及可能被生物分解掉(雖然實驗室中會快速分解,但天然水源中仍無相關數據). 3.當釋放至大氣中,預期會進行光解作用(半衰期約1至數天),且因其在水中有溶解性,可能會被雨水沖刷下來. 半衰期(空　氣)：6.2~72 小時 半衰期(水表面)：24~168 小時 半衰期(地下水)：48~336 小時

半衰期(土　壤)：24~168 小時
生物蓄積性：在體內不會蓄積.
土壤中之流動性：當釋放至土壤中,因其高蒸氣壓與對土壤的低吸附性,預期會快速的蒸發及流入地下.
其他不良效應：-

十三、廢棄處置方法

廢棄處置方法： 1. 參考廢棄物清理法。 2. 可採用特定的焚化法或衛生掩埋法處理。 3. 在安全可行的情況下，建議回收廢溶劑。 4. 廢棄物的處理，必須由受過訓對且有經驗的人員著適當裝備設施內執行(關於個人防護裝備請參照「八、暴露預防措施」)。

十四、運送資料

聯合國編號：-
聯合國運輸名稱：非危險物品
運輸危害分類：-
包裝類別：-
海洋污染物（是／否）：-
特殊運送方法及注意事項：-

十五、法規資料

適用法規： 1.職業安全衛生設施規則。2.危害性化學品標示及通識規則。 3.有機溶劑中毒預防規則。4.勞工作業場所容許暴露標準 5.道路交通安全規則。6.事業廢棄物貯存清除處理方法及設施標準。 7.公共危險物品及可燃性高壓氣體製造儲存處理場所設置標準暨安全管理辦法。

十六、其他資料

參考文獻	1. CHEMINFO 資料庫，CCINFO 光碟，2000-3 2. HAZARDTEXT 資料庫，TOMES PLUS 光碟，Vol.45，2000 3. RTECS 資料庫，TOMES PLUS 光碟，Vol.45，2000 4. HSDB 資料庫，TOMES PLUS 光碟，Vol.45，2000 5. 危害化學物質中文資料庫，環保署	
製表單位	名稱：明輝化工實業有限公司	
	地址：新北市土城區大安路138巷32號 電話：(02)2269-2527	
製 表 人	職稱：研發經理	姓名(簽章)：江清樺
製表日期	2022年10月5日	
備註	上述資料中符號"-"代表目前查無相關資料，"/"代表此欄位對該物質並不適用。	

安全資料表

一、化學品與廠商資料

化學品名稱：PC系列黑色油墨
其他名稱：-
建議用途及限制使用：網版印刷用
製造者、輸入者或供應者名稱電話：明輝化工實業有限公司 地址：新北市土城區大安路138巷32號 電話：(02)2269-2527
緊急聯絡電話：(02)2269-2527 傳真電話：(02)2269-1802

二、危害辨識資料

化學品危害分類： 易燃液體第4級 急毒性物質(吞食)第4級 急毒性物質(皮膚)第4級 急毒性物質(吸入)第4級 腐蝕/刺激皮膚物質第2級 嚴重損傷/刺激眼睛物質第1級 致癌物質第2級 特定標的器官系統毒性物質～單一暴露呼吸道刺激第3級
標示內容：  象徵符號：驚嘆號、腐蝕、健康危害 警示語：危險 危險警告訊息： H227 可燃液體 H302 吞食有害 H312 皮膚接觸有害 H332 吸入有害 H315 造成皮膚刺激 H318 造成嚴重眼睛損傷 H351 懷疑致癌 H335 可能造成呼吸系統刺激 危險防範措施：勿吸入氣體/煙氣/蒸氣/霧氣、只能使用於通風良好的地方、穿戴適當的防護衣物、手套、戴眼罩/護面罩
其他危害：-

三、成分辨識資料

混合物：

化學性質：	
危害成分之中英文名稱	濃度或濃度範圍(成分百分比)
異佛爾酮Isophorone (CAS No. 78-59-1)	40-45
樹脂Resin (CAS No. 25767-39-9)	35-40
顏料Pigment (CAS No. 7440-44-0)	15-20

四、急救措施

不同暴露途徑之急救方法：

吸　　入：1.此物質是易燃的，救援前先採取適當措施（如移除任何汙染源）。2.移走污染源或將患者移到空氣新鮮處。3.若呼吸停止立即由受訓過的人施以人工呼吸；若心跳停止施行心肺復甦術。4.立即就醫。

皮膚接觸：1.立即以緩和的刷掉或吸掉多餘的化學品。2.用水和非磨砂性肥皂徹底緩和的清洗，至少15 分鐘或直到汙染物去除。3.沖水時脫掉污染的衣服、鞋子以及皮飾品（如錶帶、皮帶）。4.若沖洗後仍有刺激感，立即就醫。

眼睛接觸：1.立即以緩和的刷掉或吸掉多餘的化學品。2.立即將眼皮撐開，用緩和的流動的溫水沖洗污染的眼睛，至少15分鐘或直到汙染源去除。3.立即就醫。

食　　入：1.若患者即將喪失意識、已失去意識或痙攣，不可經口餵食任何東西。2.若患者意識清楚，讓其用水徹底漱口。3.不可催吐。4.給患者喝下240-300 毫升的水。5.若患者自發性嘔吐，讓其身體向前傾以減低吸入危險，並讓其漱口及反覆給水。6.立即就醫。

最重要症狀及危害效應：該物質若被吸入肺部，會導致肺部刺激（化學性支氣管炎）或死亡。

對急救人員之防護：應穿著C級防護裝備在安全區實施急救。

對醫師之提示：吞食時，考慮洗胃、活性碳。

五、滅火措施

適用滅火劑：化學乾粉、泡沫、二氧化碳

滅火時可能遭遇之特殊危害：1.蒸氣比空氣重，會傳播至遠處，遇火源可能造成回火。2.液體會浮於水上，而將火勢蔓延開。3.火場中可能釋出毒氣。4.火場中容器可能會爆炸。

特殊滅火程序：1. 以水霧冷卻暴露火場的貯槽或容器。2.以水霧滅火可能無效，除非消防人員受過各種易燃液體之滅火訓練。3.如果溢漏未引燃，噴水霧以分散蒸氣並保護試圖止漏的人員。4.噴水將外洩物沖離引燃源。5.消防人員必須配戴正壓空氣呼吸器（自攜式呼吸防護具）

消防人員之特殊防護設備：配帶空氣呼吸器及防護手套、消防衣。

六、洩漏處理方法

個人應注意事項：1.在污染區尚未完全清理乾淨前，限制人員接近該區。2.確定清理工作是由受過訓練的人員負責。3.穿戴適當的個人防護裝備。

環境注意事項：1.對該區域進行通風換氣。2.撲滅或除去所有發火源。3.通知政府安全衛生與環保相關單位。

清理方法：1.不要碰觸外洩物。2.避免外洩物進入下水道或密閉的空間內。3.在安全許可的情形下，設法阻止或減少溢漏。4.用不會和外洩物反應的泥土、沙或類似穩定且不可燃的物質圍堵外洩物。5.少量洩漏時，用不會和外洩物反應之吸收劑吸收。以污染的吸收劑和外洩物具有同樣的危害性，須置於加蓋並標示的適當容器裡。用水沖洗溢漏區域。6.大量溢漏時：聯絡消防、緊急處理單位及供應商以尋求協助。

七、安全處置與儲存方法

處置：1.此物質是易燃性和毒性液體，處置時工程控制應運轉及善用個人防護設備(關於個人防護裝備請參照「八、暴露預防措施」)；工作人員應受適當有關物質之危險性及安全使用法之訓練。2.除去所有發火源並遠離熱、可燃物及不相容物。3.工作區應有"禁止抽菸"標誌。4.液體會累積電荷，考慮額外之設計以增加電導性。如所有桶槽、轉裝容器和管線都要接地，接地時必須接觸到裸金屬，輸送操作中，應降

低流速，增加操作時間，增加液體留在管線中之時間或低溫操作。5.當調配之操作不是在密閉系統進行時，確保調配的容器和接收的運送設備和容器要等電位連接。6.空的桶槽、容器和管線可能仍有具危害性的殘留物，未清理前不得從事任何焊接、切割、鑽孔或其它熱的工作進行。7.桶槽或貯存容器可充填惰性氣體以減少火災和爆炸的危險。8.作業場所使用不產生火花的通風系統，設備應為防爆型。9.保持走道和出口暢通無阻。10.貯存區和大量操作的區域，考慮安裝溢漏和火災偵測系統及適當的自動消防系統或足夠且可用的緊急處理裝置。11.作業避免產生霧滴或蒸氣，在通風良好的指定區內操作並採最小使用量，操作區與貯存區分開。12.不要與不相容物一起使用（如強氧化劑）以免增加火災和爆炸的危險。13.使用相容物質製成的貯存容器，分裝時小心不要噴灑出來。14.不要以空氣或惰性氣體將液體自容器中加壓而輸送出來。15.除非調配區以耐火結構隔離，否則不要在貯存區進行調配工作。16.使用經認可的易燃性液體貯存容器和調配設備。17.不要將受污染的液體倒回原貯存容器。18.容器要標示，不使用時保持緊密並避免堆積和受損。
儲存：1.貯存在陰涼、乾燥、通風良好以及陽光無法直接照射的地方，遠離熱源、發火源及不相容物。2.遵循相關法規貯存與處理易燃性物質。3.門口設斜坡或門檻或挖溝槽使洩漏物可排放至安全的地方。4.貯存區應標示清楚，無障礙物並允許指定或受過訓的人員進入。5.貯存區與工作區應分開；遠離升降機、建築物、房間出口或主要通道貯存。6.貯存區附近應有適當的滅火劑和清理溢漏設備。7.檢查所有新進容器是否適當標示並無破損。8.限量貯存。9.以相容物質製成的貯存容器。10.空的容器應與貯存區分開。11.貯桶接地並與其它設備等電位連接。12.避免大量貯存於室內，儘可能貯存於隔離的防火建築。13.貯槽之排氣管應加裝火焰防止裝置。14.貯槽須為地面貯槽，底部整個區域應封住以防滲漏，周圍須有能圍堵整個容量之防液堤。

八、暴露預防措施

工程控制：1.單獨使用不產生火花、接地的通風系統。2.排氣口直接通到室外，並採取保護環境的重要措施。3.供給充分新鮮空氣以補充排氣系統抽出的空氣。
控制參數： 八小時日時量平均容許濃度：20 ppm 短時間時量平均容許濃度：- 最高容許濃度：- 生物指標：-
個人防護設備： 呼吸防護：1.750 ppm 以下：含有機蒸氣濾罐之化學濾罐式或動力型空氣淨化式呼吸防護具，供氧式呼吸防護具，全面型自攜式或供氣式呼吸防護具、含有機蒸氣濾毒罐之防毒面罩。2.未知濃度或IDLH 情況：正壓全面型空氣呼吸器（自攜式呼吸防護具SCBA）或正壓全面型供氣式呼吸防護具與輔助型正壓空氣呼吸器（自攜式呼吸防護具SCBA）一起使用。3.逃生：含有機蒸氣濾罐之氣體面罩或逃生型空氣呼吸器（自攜式呼吸防護具SCBA）。 手部防護：丁基橡膠、腈類橡膠、Viton、4H、CPF3、Responder 等材質的防滲手套。 眼睛防護：1.化學安全護目鏡。2.面罩。 皮膚及身體防護： 1.連身式防護衣。2.工作鞋。3.工作區要有淋浴/沖眼設備。
衛生措施：-

九、物理及化學性質

外觀（物質狀態、顏色等）：不透明膏狀	氣味：淡香
嗅覺閾值：1-500ppm(偵測)、8-50 ppm(覺察)	熔點：-

pH值：-	沸點/沸點範圍：212 ℃
易燃性（固體、氣體）：-	閃火點：75 ℃
分解溫度：-	測試方法（開杯或閉杯）：閉杯
自燃溫度：354 ℃	爆炸界限：1.5-7.0%
蒸氣壓：3.8 mmHg@22.3 ℃	蒸氣密度：4.6 （空氣=1）
密度：0.962 （水＝1）	溶解度：10 g/100 mL（水）
辛醇／水分配係數(log Kow)：0.15	揮發速率：0.7（乙酸丁酯=1）

十、安定性及反應性

安定性：正常狀況下安定
特殊狀況下可能之危害反應：1.強氧化劑（如過氧化物、硝酸鹽、過氯酸鹽）：可能引起火災及爆炸
應避免之狀況：熱、明火、靜電、火焰、引火源。
應避免之物質： 1.強氧化劑（如過氧化物、硝酸鹽、過氯酸鹽）。
危害分解物：-

十一、毒性資料

暴露途徑：吸入、皮膚接觸、眼睛接觸、食入
症狀：噁心、頭痛、暈眩、疲勞、噁心、酒醉感、皮膚炎
急毒性： 吸　　入：1.暴露於10000 ppm 6 分鐘或2000ppm 4 分鐘，引起輕微暈眩，5000ppm 4分鐘，導致明顯的暈眩，無法直線行走，不行蹣跚和肌肉不協調，但無眼部疼痛或鼻子、喉嚨刺激性。2.高濃度會引起黏膜的刺激，曝露5000ppm 15分鐘，會使某些人昏睡持續30 分鐘之久，持續曝露數個小時會產生噁心、食慾不振、汽油味等身體不適。3.致命的濃度為16000ppm。 皮膚接觸：1.簡略的接觸，無刺激性。2.長時間接觸（1-5 小時），會產生紅和發炎。 眼睛接觸：1.高濃度蒸氣會引起輕微刺激。2.液體機接觸會引起暫時性刺激和疼痛。 食　　入：1.食入會引起噁心、嘔吐、腹部腫脹、頭痛和抑鬱。2.吞食的毒性低，除非液體吸入肺部。吸入為吞食或嘔吐時，該物質被吸入肺部，會導致肺部刺激（化學性支氣管炎）、肺部組織受損（肺水腫）或死亡。 LD50（測試動物、曝露途徑）：2000 mg/kg (雄鼠，吞食) LC50（測試動物、曝露途徑）：800 mg/kg (雌鼠，吞食)
慢毒性或長期毒性：1.皮膚長期接觸，會引起皮膚刺激和皮膚炎（發炎、紅、腫脹）。2.曝露於0.75-1000 ppm 達1-5 年可能引起血液混亂。

十二、生態資料

生態毒性： LC50(魚類)：120 mg/L - 24 小時 EC50(水生無脊椎動物)：- 生物濃縮係數(BCF)：-
持久性及降解性： 1.4 次實驗解果顯示,異丙醇於污水中五天(20℃)後可分解58%的BOD 理論值. 2.當釋放至水中,預期會蒸發(估計其半衰期為5.4天)及可能被生物分解掉(雖然實驗室中會快速分解,但天然水源中仍無相關數據). 3.當釋放至大氣中,預期會進行光解作用(半衰期約1至數天),且因其在水中有溶解性,可能會被雨水沖刷下來. 半衰期(空　氣)：6.2~72 小時 半衰期(水表面)：24~168 小時 半衰期(地下水)：48~336 小時

半衰期(土　壤)：24~168 小時
生物蓄積性：在體內不會蓄積.
土壤中之流動性：當釋放至土壤中,因其高蒸氣壓與對土壤的低吸附性,預期會快速的蒸發及流入地下.
其他不良效應：-

十三、廢棄處置方法

廢棄處置方法： 1. 參考廢棄物清理法。 2. 可採用特定的焚化法或衛生掩埋法處理。 3. 在安全可行的情況下，建議回收廢溶劑。 4. 廢棄物的處理，必須由受過訓對且有經驗的人員著適當裝備設施內執行(關於個人防護裝備請參照「八、暴露預防措施」)。

十四、運送資料

聯合國編號：-
聯合國運輸名稱：非危險物品
運輸危害分類：-
包裝類別：-
海洋污染物（是／否）：-
特殊運送方法及注意事項：-

十五、法規資料

適用法規： 1.職業安全衛生設施規則。2.危害性化學品標示及通識規則。 3.有機溶劑中毒預防規則。4.勞工作業場所容許暴露標準 5.道路交通安全規則。6.事業廢棄物貯存清除處理方法及設施標準。 7.公共危險物品及可燃性高壓氣體製造儲存處理場所設置標準暨安全管理辦法。

十六、其他資料

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製表單位	名稱：明輝化工實業有限公司	
	地址：新北市土城區大安路138巷32號 電話：(02)2269-2527	
製 表 人	職稱：研發經理	姓名(簽章)：江清樺
製表日期	2022年11月1日	
備註	上述資料中符號"-"代表目前查無相關資料，"/"代表此欄位對該物質並不適用。	

Test Report

No.: ETR22805122 Date: 01-Sep-2022

SABIC TAIWAN HOLDING LIMITED, TAIWAN BRANCH
ROOM B, 7F, NO. 8, MIN SHENG E. RD., SEC. 3, TAIPEI CITY 10480, TAIWAN

The following sample(s) was/were submitted and identified by the applicant as:

Sample Submitted By	:	SABIC TAIWAN HOLDING LIMITED, TAIWAN BRANCH
Sample Name	:	PC FILM/SHEET
Style/Item No.	:	LEXAN* 8A13 / 8A13E / 8A13F / 8A35 / 8A37 / 8A73 / 8A35T / 8A35N
Sample may cover	:	LEXAN* 8A13, 8A13D, 8A13T, 8A13E, 8A13EMD, 8A13ESH, 8A13EMSH, 8A13F, 8A13FT, 8A13FD, 8A13FMD, 88A35, 8A35D, 8A35DD, 8A35DA, 8A35L, 8A35T, 8A37, 8A37D, 8A73, 8A35N, 8Axx (x MAY COVER 0 ~ 99, ANY LETTERS [EXCLUDING V] OR COMBINATION WITH DIGITS AND LETTERS)
Main Substance	:	POLYCARBONATE LEXAN* IS A TRADEMARK OF SABIC

==========

Sample Receiving Date	:	26-Aug-2022
Testing Period	:	26-Aug-2022 to 01-Sep-2022

Test Requested	:	(1)	As specified by client, with reference to RoHS 2011/65/EU Annex II and amending Directive (EU) 2015/863 to determine Cadmium, Lead, Mercury, Cr(VI), PBBs, PBDEs, DBP, BBP, DEHP, DIBP contents in the submitted sample(s).
		(2)	As specified by client, to test PAHs and other item(s).
Test Results	:		Please refer to following pages.

Troy Chang / Department Manager
Signed for and on behalf of
SGS TAIWAN LTD.
Chemical Laboratory - Taipei

PIN CODE: C661B4E1

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SABIC TAIWAN HOLDING LIMITED, TAIWAN BRANCH
ROOM B, 7F, NO. 8, MIN SHENG E. RD., SEC. 3, TAIPEI CITY 10480, TAIWAN

Test Part Description

No.1 : TRANSLUCENT SHEET

Test Result(s)

Test Item(s)	Method	Unit	MDL	Result
				No.1
Cadmium (Cd) (CAS No.: 7440-43-9)	With reference to IEC 62321-5: 2013, analysis was performed by ICP-OES.	mg/kg	2	n.d.
Lead (Pb) (CAS No.: 7439-92-1)	With reference to IEC 62321-5: 2013, analysis was performed by ICP-OES.	mg/kg	2	n.d.
Mercury (Hg) (CAS No.: 7439-97-6)	With reference to IEC 62321-4: 2013+ AMD1: 2017, analysis was performed by ICP-OES.	mg/kg	2	n.d.
Hexavalent Chromium Cr(VI) (CAS No.: 18540-29-9)	With reference to IEC 62321-7-2: 2017, analysis was performed by UV-VIS.	mg/kg	8	n.d.
Monobromobiphenyl	With reference to IEC 62321-6: 2015, analysis was performed by GC/MS.	mg/kg	5	n.d.
Dibromobiphenyl		mg/kg	5	n.d.
Tribromobiphenyl		mg/kg	5	n.d.
Tetrabromobiphenyl		mg/kg	5	n.d.
Pentabromobiphenyl		mg/kg	5	n.d.
Hexabromobiphenyl		mg/kg	5	n.d.
Heptabromobiphenyl		mg/kg	5	n.d.
Octabromobiphenyl		mg/kg	5	n.d.
Nonabromobiphenyl		mg/kg	5	n.d.
Decabromobiphenyl		mg/kg	5	n.d.
Sum of PBBs		mg/kg	-	n.d.
Monobromodiphenyl ether		mg/kg	5	n.d.
Dibromodiphenyl ether		mg/kg	5	n.d.
Tribromodiphenyl ether		mg/kg	5	n.d.
Tetrabromodiphenyl ether		mg/kg	5	n.d.
Pentabromodiphenyl ether		mg/kg	5	n.d.
Hexabromodiphenyl ether		mg/kg	5	n.d.
Heptabromodiphenyl ether		mg/kg	5	n.d.
Octabromodiphenyl ether		mg/kg	5	n.d.
Nonabromodiphenyl ether		mg/kg	5	n.d.
Decabromodiphenyl ether		mg/kg	5	n.d.
Sum of PBDEs		mg/kg	-	n.d.

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Test Item(s)	Method	Unit	MDL	Result No.1
Polycyclic Aromatic Hydrocarbons (PAHs)				
Benzo[a]pyrene (CAS No.: 50-32-8)	With reference to AfPS GS 2019:01 PAK, analysis was performed by GC/MS.	mg/kg	0.2	n.d.
Benzo[e]pyrene (CAS No.: 192-97-2)		mg/kg	0.2	n.d.
Benzo[a]anthracene (CAS No.: 56-55-3)		mg/kg	0.2	n.d.
Benzo[b]fluoranthene (CAS No.: 205-99-2)		mg/kg	0.2	n.d.
Benzo[j]fluoranthene (CAS No.: 205-82-3)		mg/kg	0.2	n.d.
Benzo[k]fluoranthene (CAS No.: 207-08-9)		mg/kg	0.2	n.d.
Chrysene (CAS No.: 218-01-9)		mg/kg	0.2	n.d.
Dibenzo[a,h]anthracene (CAS No.: 53-70-3)		mg/kg	0.2	n.d.
Benzo[g,h,i]perylene (CAS No.: 191-24-2)		mg/kg	0.2	n.d.
Indeno[1,2,3-c,d]pyrene (CAS No.: 193-39-5)		mg/kg	0.2	n.d.
Anthracene (CAS No.: 120-12-7)		mg/kg	0.2	n.d.
Fluoranthene (CAS No.: 206-44-0)		mg/kg	0.2	n.d.
Phenanthrene (CAS No.: 85-01-8)		mg/kg	0.2	n.d.
Pyrene (CAS No.: 129-00-0)		mg/kg	0.2	n.d.
Naphthalene (CAS No.: 91-20-3)		mg/kg	0.2	n.d.
Sum of 15 PAHs		mg/kg	-	n.d.
Butyl benzyl phthalate (BBP) (CAS No.: 85-68-7)	With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.	mg/kg	50	n.d.
Dibutyl phthalate (DBP) (CAS No.: 84-74-2)	With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.	mg/kg	50	n.d.
Di-(2-ethylhexyl) phthalate (DEHP) (CAS No.: 117-81-7)	With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.	mg/kg	50	n.d.
Diisobutyl phthalate (DIBP) (CAS No.: 84-69-5)	With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.	mg/kg	50	n.d.
Diisodecyl phthalate (DIDP) (CAS No.: 26761-40-0, 68515-49-1)	With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.	mg/kg	50	n.d.

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Test Item(s)	Method	Unit	MDL	Result
				No.1
Diisononyl phthalate (DINP) (CAS No.: 28553-12-0, 68515-48-0)	With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.	mg/kg	50	n.d.
Di-n-octyl phthalate (DNOP) (CAS No.: 117-84-0)	With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.	mg/kg	50	n.d.
Di-n-hexyl phthalate (DNHP) (CAS No.: 84-75-3)	With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.	mg/kg	50	n.d.
Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified (α- HBCDD, β- HBCDD, γ- HBCDD) (CAS No.: 25637-99-4, 3194-55-6 (134237-51-7, 134237-50-6, 134237-52-8))	With reference to IEC 62321-9: 2021, analysis was performed by GC/MS.	mg/kg	20	n.d.
Chlorine (Cl) (CAS No.: 22537-15-1)	With reference to BS EN 14582: 2016, analysis was performed by IC.	mg/kg	50	n.d.
Bromine (Br) (CAS No.: 10097-32-2)	With reference to BS EN 14582: 2016, analysis was performed by IC.	mg/kg	50	n.d.
PFOS and its salts (CAS No.: 1763-23-1 and its salts)	With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.	mg/kg	0.01	n.d.
Tetrabromobisphenol A (TBBP-A) (CAS No.: 79-94-7)	With reference to RSTS-E&E-121, analysis was performed by LC/MS.	mg/kg	10	n.d.

Note :

1. mg/kg = ppm ; 0.1wt% = 0.1% = 1000ppm
2. MDL = Method Detection Limit
3. n.d. = Not Detected (Less than MDL)
4. "-" = Not Regulated
5. PFOS and its salts including :
   CAS No.: 29081-56-9, 2795-39-3, 29457-72-5, 70225-14-8, 56773-42-3, 251099-16-8, 307-35-7.

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Remark：

Δ AfPS (German commission for Product Safety): GS PAHs requirements

Parameter	Category 1	Category 2		Category 3	
	Materials intended to be placed in the mouth, or materials in toys (Directive 2009/48/EC) or articles for children up to 3 years of age with intended long-term skin contact (> 30 seconds).	Materials that are not in Category 1, with intended or foreseeable long-term skin contact (> 30 seconds) or short-term repetitive contact with the skin.		Materials not covered by Category 1 or 2, with intended or foreseeable short-term skin contact (≦30 seconds).	
		a. Use by children under 14	b. Other consumer products	a. Use by children under 14	b. Other consumer products
Naphthalene	< 1	< 2		< 10	
Phenanthrene	< 1 Sum	< 5 Sum	< 10 Sum	< 20 Sum	< 50 Sum
Anthracene					
Fluoranthene					
Pyrene					
Benzo[a]anthracene	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Chrysene	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo[b]fluoranthene	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo[j]fluoranthene	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo[k]fluoranthene	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo[a]pyrene	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo[e]pyrene	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Indeno[1,2,3-c,d] pyrene	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Dibenzo[a,h]anthracene	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo[g,h,i]perylene	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Sum of 15 PAH	< 1	< 5	< 10	< 20	< 50

Unit：mg/kg

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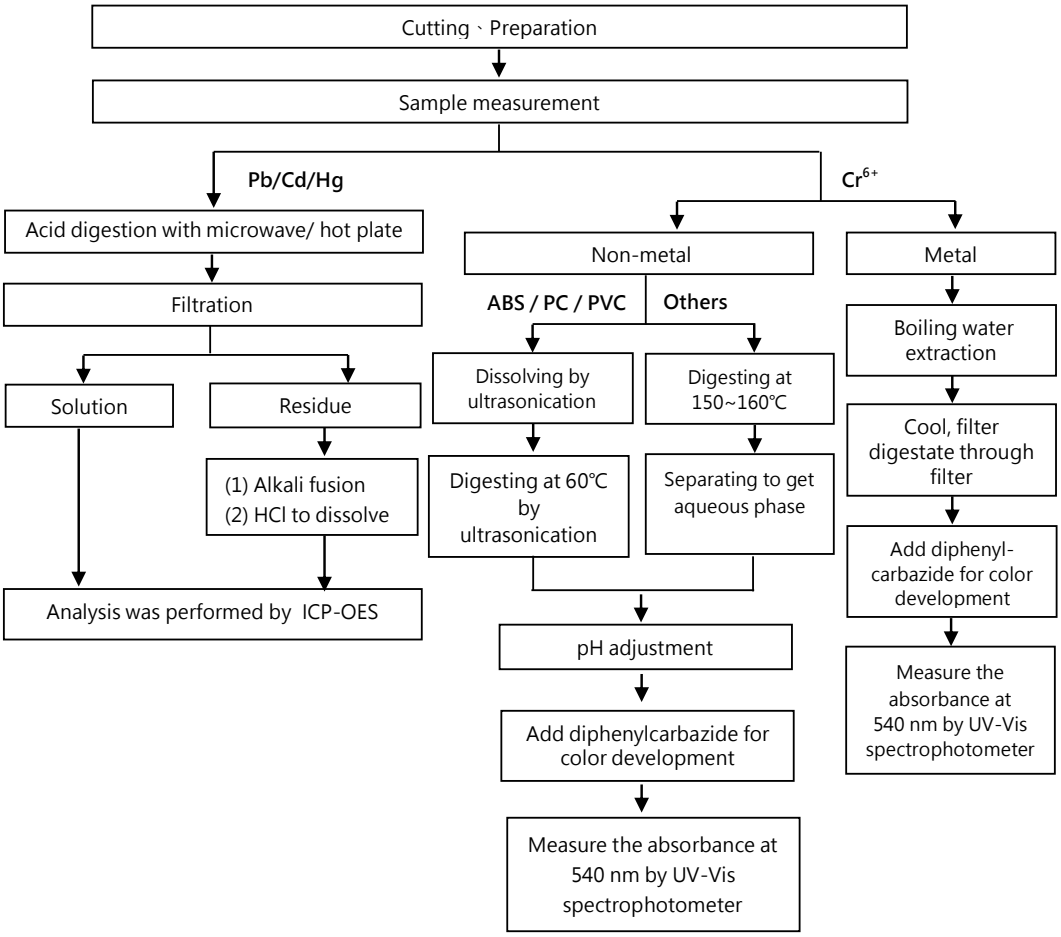
Analytical flow chart of heavy metal

These samples were dissolved totally by pre-conditioning method according to below flow chart.

(Cr^{6+} test method excluded)



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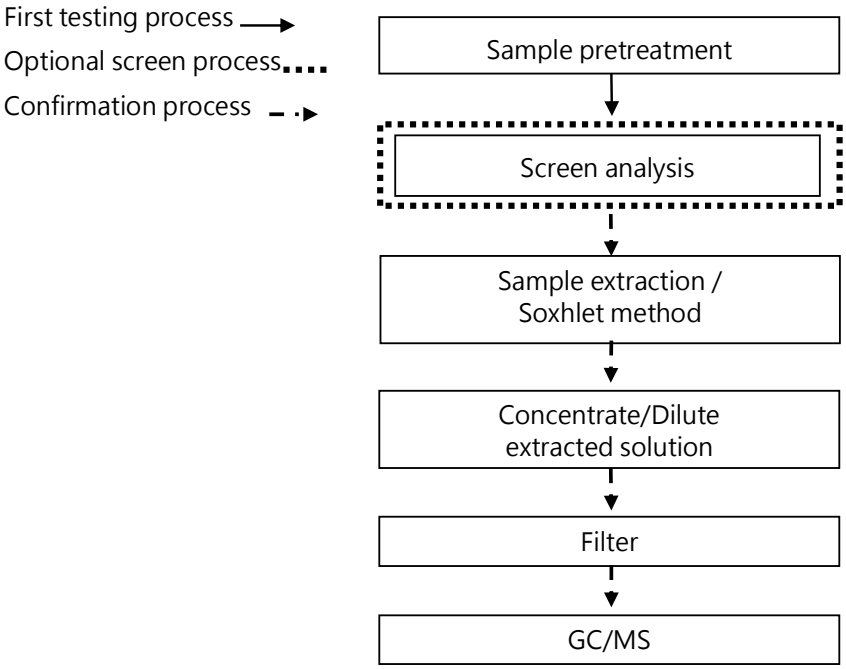
Analytical flow chart – PBBs / PBDEs



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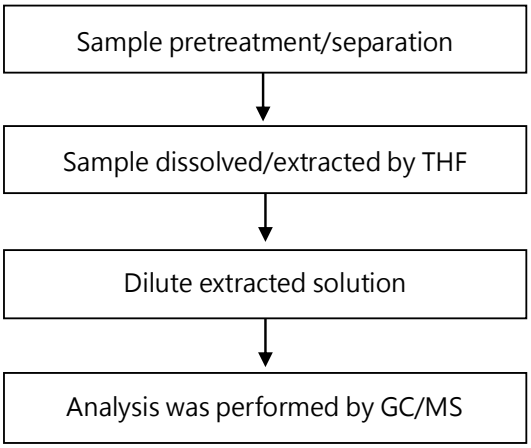
Analytical flow chart - Phthalate

【Test method: IEC 62321-8】



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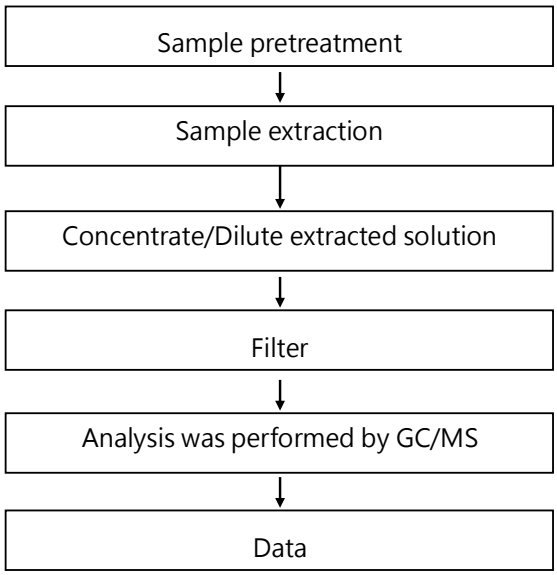
Analytical flow chart - HBCDD



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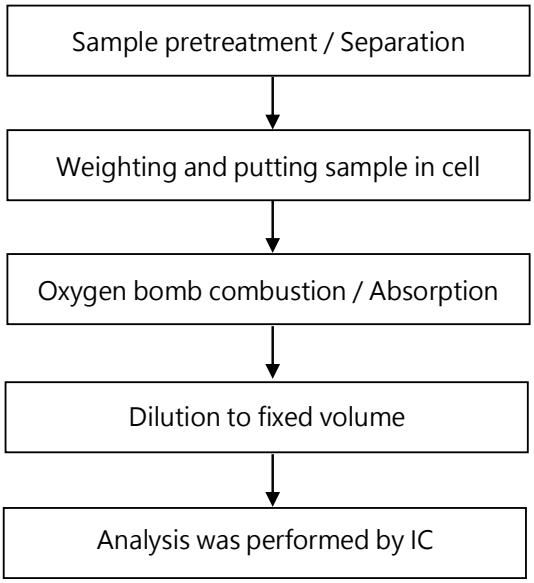
Analytical flow chart - Halogen



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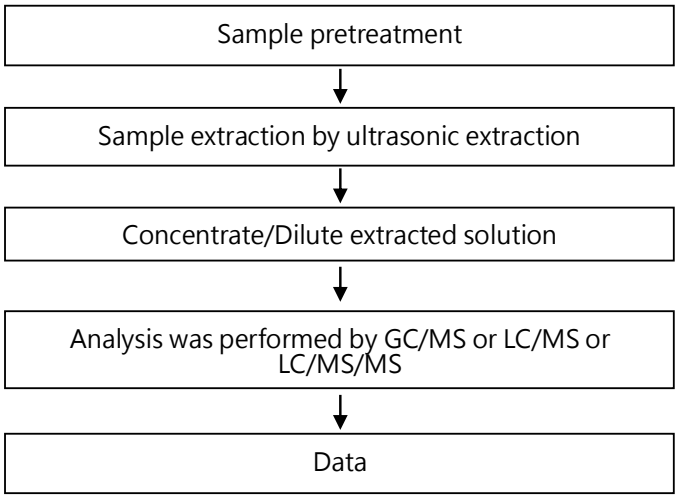
Analytical flow chart – PFAS (including PFOA/PFOS/its related compound, etc.)



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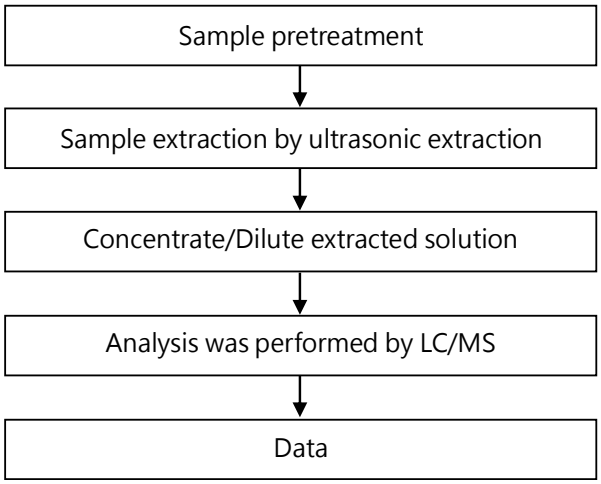
Analytical flow chart - TBBP-A



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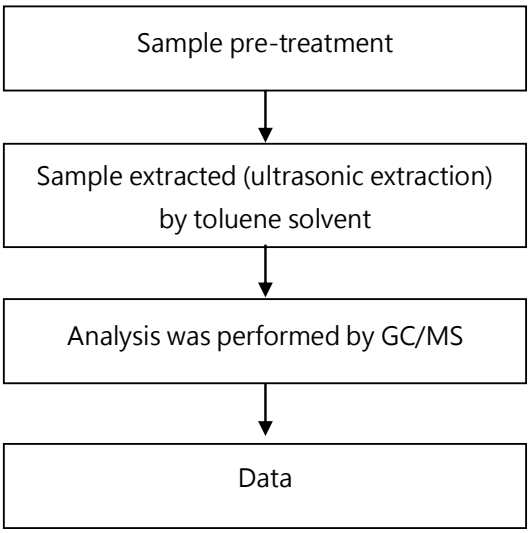
Analytical flow chart - PAHs (Polycyclic Aromatic Hydrocarbons)



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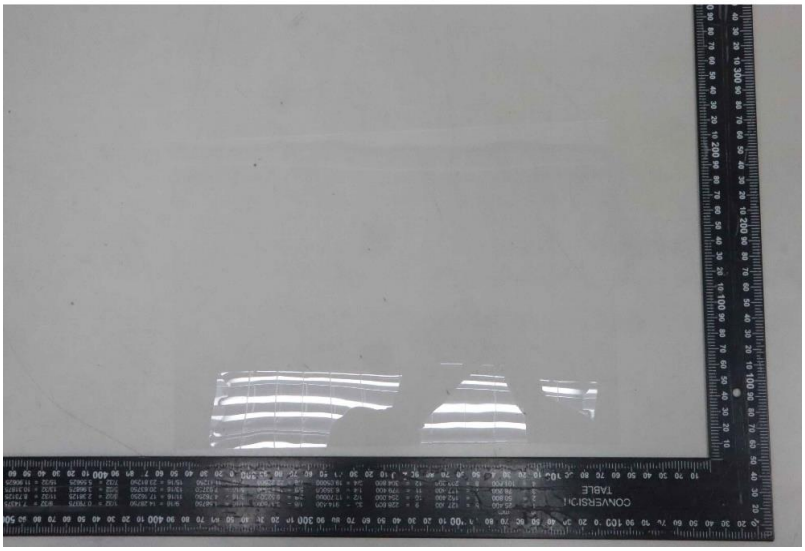
SABIC TAIWAN HOLDING LIMITED, TAIWAN BRANCH
ROOM B, 7F, NO. 8, MIN SHENG E. RD., SEC. 3, TAIPEI CITY 10480, TAIWAN

* The tested sample / part is marked by an arrow if it's shown on the photo. *

ETR22805122



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Test Report

No. CANEC2220385901 Date: 27 Sep 2022 Page 1 of 6

Client Name : 3M MATERIAL TECHNOLOGY (GUANGZHOU) CO.,LTD.

Client Address : NO.9,NANXIANG 2 ROAD,SCIENCE CITY GUANGZHOU HIGH TECH INDUSTRY DEVELOPMENT DISTRICT
CHINA

Sample Name : 9448HK

Model No. : 9448HK

Client Ref. Info. : 9448HKB

The above sample(s) and information were provided by the client.

SGS Job No. : CP22-052639 - GZ

Date of Sample Received : 22 Sep 2022

Testing Period : 22 Sep 2022 - 27 Sep 2022

Test Requested : Selected test(s) as requested by the client.

Test Method(s) : Please refer to next page(s).

Test Result(s) : Please refer to next page(s).

Result Summary :

Test Requested	Conclusion
EU RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU-Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs), Bis(2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) and Diisobutyl phthalate (DIBP)	PASS

Signed for and on behalf of
SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch

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EE5F45F4

Jessie Li

Jessie Li
Approved Signatory

SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch Testing Center Chemical Laboratory

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Test Result(s) :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	CAN22-203859.001	Colorless transparent double-side adhesive sheet

Remarks :

(1) 1 mg/kg = 0.0001%
(2) MDL = Method Detection Limit
(3) ND = Not Detected (< MDL)
(4) "-" = Not Regulated

EU RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU- Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs), Bis(2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) and Diisobutyl phthalate (DIBP)

Test Method : With reference to IEC 62321-4:2013+A1:2017, IEC 62321-5:2013, IEC 62321-7-2:2017 , IEC 62321-6:2015 and IEC 62321-8:2017, analyzed by ICP-OES , UV-Vis and GC-MS .

Test Item(s)	Limit	Unit	MDL	001
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1000	mg/kg	2	ND
Mercury (Hg)	1000	mg/kg	2	ND
Hexavalent Chromium (CrVI)	1000	mg/kg	8	ND
Sum of PBBs	1000	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	1000	mg/kg	-	ND
Monobromodiphenyl ether	-	mg/kg	5	ND
Dibromodiphenyl ether	-	mg/kg	5	ND
Tribromodiphenyl ether	-	mg/kg	5	ND
Tetrabromodiphenyl ether	-	mg/kg	5	ND

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Test Item(s)	Limit	Unit	MDL	*001*
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
Dibutyl phthalate (DBP)	1000	mg/kg	50	ND
Butyl benzyl phthalate (BBP)	1000	mg/kg	50	ND
Bis (2-ethylhexyl) phthalate (DEHP)	1000	mg/kg	50	ND
Diisobutyl Phthalates (DIBP)	1000	mg/kg	50	ND

Notes :

(1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.

(2) IEC 62321 series is equivalent to EN 62321 series

(3) The restriction of DEHP, BBP, DBP and DIBP shall apply to medical devices, including in vitro medical devices, and monitoring and control instruments, including industrial monitoring and control instruments, from 22 July 2021.

Unless otherwise stated, the decision rule for conformity reporting is based on Binary Statement for Simple Acceptance Rule (w=0) stated in ILAC-G8:09/2019.

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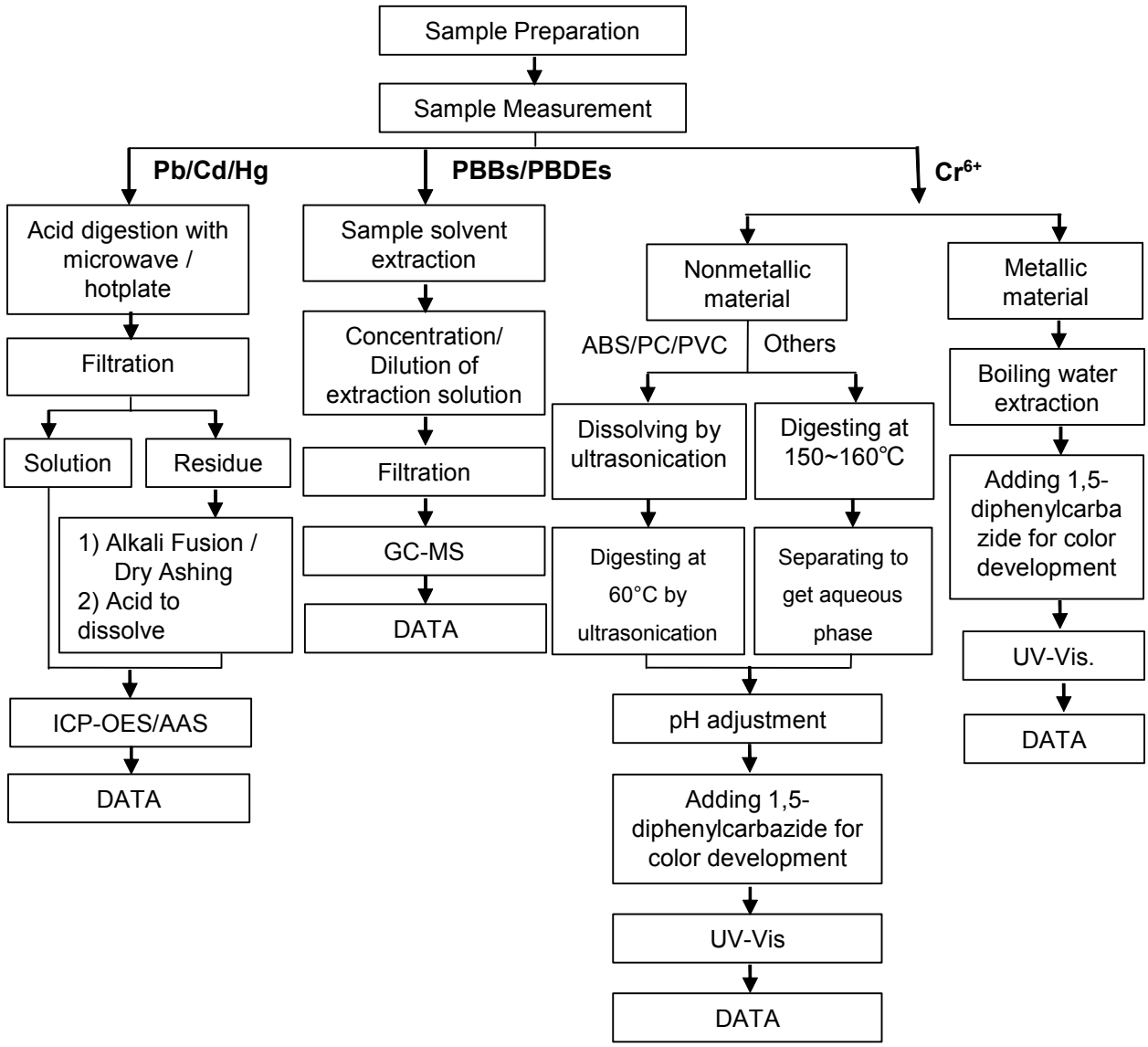
Pb/Cd/Hg/Cr^{6+}/PBBs/PBDEs Testing Flow Chart

1) These samples were dissolved totally by pre -conditioning method according to below flow chart. (Cr^{6+} and PBBs/PBDEs test method excluded).



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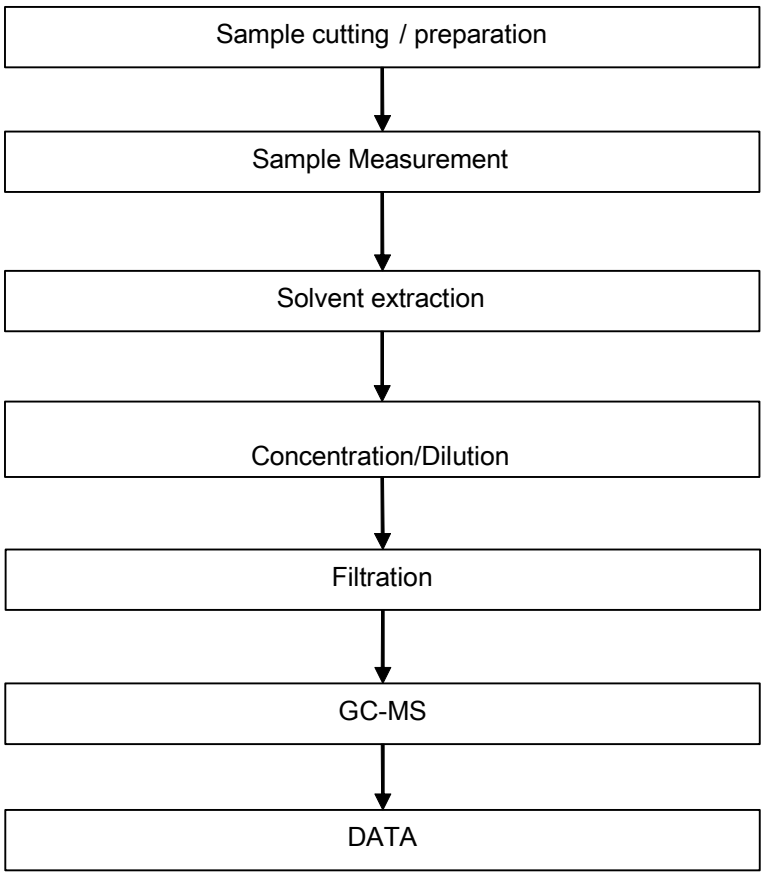
Phthalates Testing Flow Chart



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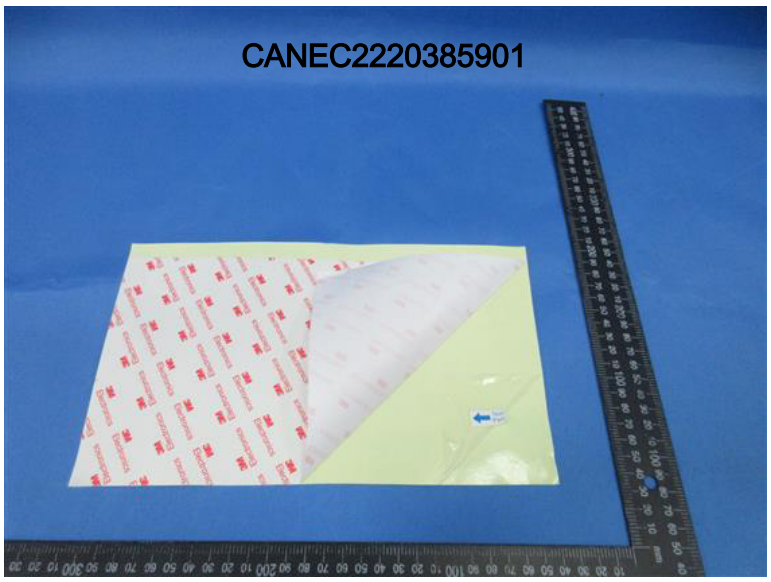
Sample photo:



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Test Report

Client Name : 3M MATERIAL TECHNOLOGY (GUANGZHOU) CO.,LTD.

Client Address : NO.9,NANXIANG 2 ROAD,SCIENCE CITY GUANGZHOU HIGH TECH INDUSTRY DEVELOPMENT DISTRICT
CHINA

Sample Name : 9448HK

Model No. : 9448HK

Client Ref. Info. : 9448HKB

The above sample(s) and information were provided by the client.

SGS Job No. : CP22-052639 - GZ

Date of Sample Received : 22 Sep 2022

Testing Period : 22 Sep 2022 - 27 Sep 2022

Test Requested : Selected test(s) as requested by the client.

Test Method(s) : Please refer to next page(s).

Test Result(s) : Please refer to next page(s).

Signed for and on behalf of
SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch

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EC471B77

Jessie Li

Jessie Li
Approved Signatory

SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch Testing Center Chemical Laboratory

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Test Result(s) :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	CAN22-203859.001	Colorless transparent double-side adhesive sheet

Remarks :

(1) 1 mg/kg = 0.0001%

(2) MDL = Method Detection Limit

(3) ND = Not Detected (< MDL)

(4) "-" = Not Regulated

Halogen

Test Method : With reference to EN 14582:2016, analysis was performed by IC.

Test Item(s)	Unit	MDL	*001*
Fluorine (F)	mg/kg	50	ND
Chlorine (Cl)	mg/kg	50	121
Bromine (Br)	mg/kg	50	ND
Iodine (I)	mg/kg	50	ND

Unless otherwise stated, the decision rule for conformity reporting is based on Binary Statement for Simple Acceptance Rule (w=0) stated in ILAC-G8:09/2019.

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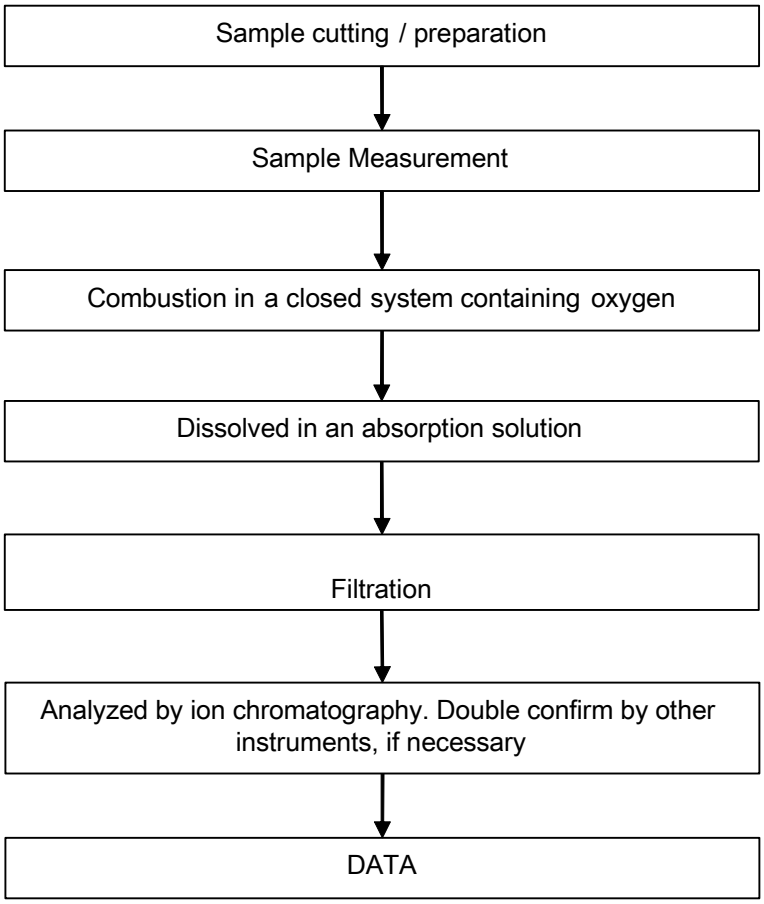
Halogen Testing Flow Chart



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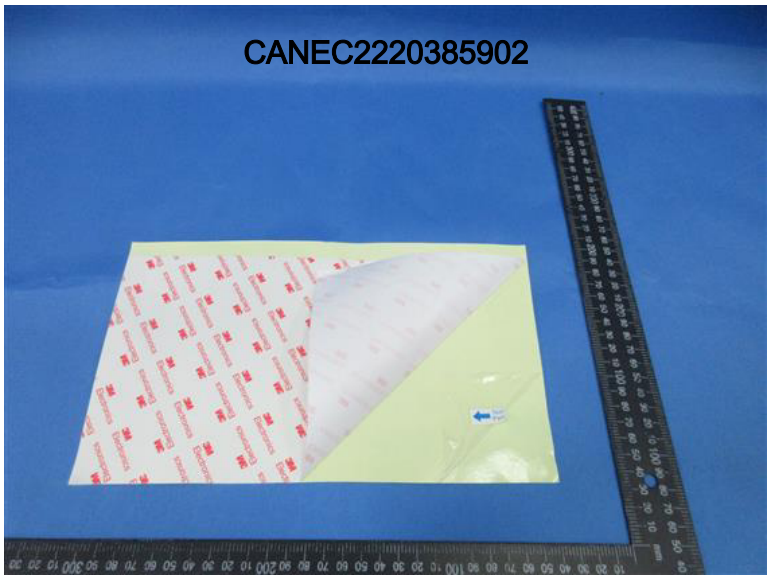

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Member of the SGS Group (SGS SA)

測試報告
Test Report

號碼(No.): ETR22A04773　　日期(Date): 07-Nov-2022　　

明輝化工實業有限公司 (MIN HUEY CHEMICALS INDUSTRIES CO., LTD.)
新北市土城區大安路138巷32號 (NO. 32, LN 138, DA'AN RD., TUCHENG DIST., NEW TAIPEI CITY 23673, TAIWAN)

以下測試樣品係由申請廠商所提供及確認 (The following sample(s) was/were submitted and identified by the applicant as)：

送樣廠商(Sample Submitted By)	:	明輝化工實業有限公司 (MIN HUEY CHEMICALS INDUSTRIES CO., LTD.)
樣品名稱(Sample Name)	:	MIN HUEY SCREEN INK (明輝油墨)
樣品型號(Style/Item No.)	:	黑色 (無鹵) (BLACK (NON-HALOGEN))

==========

收件日(Sample Receiving Date)	:	31-Oct-2022
測試期間(Testing Period)	:	31-Oct-2022 to 07-Nov-2022

測試需求(Test Requested) :

(1) 依據客戶指定，參考RoHS 2011/65/EU Annex II及其修訂指令(EU) 2015/863測試鎘、鉛、汞、六價鉻、多溴聯苯、多溴聯苯醚, DBP, BBP, DEHP, DIBP。 (As specified by client, with reference to RoHS 2011/65/EU Annex II and amending Directive (EU) 2015/863 to determine Cadmium, Lead, Mercury, Cr(VI), PBBs, PBDEs, DBP, BBP, DEHP, DIBP contents in the submitted sample(s).)

(2) 其他測試項目請見下一頁。 (Please refer to next pages for the other item(s).)

測試結果(Test Results) : 請參閱下一頁 (Please refer to following pages.)

結　論(Conclusion) :

(1) 根據客戶所提供的樣品，其鎘、鉛、汞、六價鉻、多溴聯苯、多溴聯苯醚, DBP, BBP, DEHP, DIBP的測試結果符合RoHS 2011/65/EU Annex II暨其修訂指令(EU) 2015/863之限值要求。 (Based on the performed tests on submitted sample(s), the test results of Cadmium, Lead, Mercury, Cr(VI), PBBs, PBDEs, DBP, BBP, DEHP, DIBP comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.)

Troy Chang / Department Manager
Signed for and on behalf of
SGS TAIWAN LTD.
Chemical Laboratory - Taipei

PIN CODE: 70B44958

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測試報告
Test Report

明輝化工實業有限公司 (MIN HUEY CHEMICALS INDUSTRIES CO., LTD.)
新北市土城區大安路138巷32號 (NO. 32, LN 138, DA'AN RD., TUCHENG DIST., NEW TAIPEI CITY 23673, TAIWAN)

測試部位敘述 (Test Part Description)

No.1 : 黑色油墨 (BLACK INK)

測試結果 (Test Results)

測試項目 (Test Items)	測試方法 (Method)	單位 (Unit)	MDL	結果 (Result) No.1	限值 (Limit)
鎘 (Cd) (Cadmium (Cd)) (CAS No.: 7440-43-9)	參考IEC 62321-5: 2013，以感應耦合電漿發射光譜儀分析。(With reference to IEC 62321-5: 2013, analysis was performed by ICP-OES.)	mg/kg	2	n.d.	100
鉛 (Pb) (Lead (Pb)) (CAS No.: 7439-92-1)		mg/kg	2	n.d.	1000
汞 (Hg) (Mercury (Hg)) (CAS No.: 7439-97-6)	參考IEC 62321-4: 2013+ AMD1: 2017，以感應耦合電漿發射光譜儀分析。(With reference to IEC 62321-4: 2013+ AMD1: 2017, analysis was performed by ICP-OES.)	mg/kg	2	n.d.	1000
六價鉻 Cr(VI) (Hexavalent Chromium Cr(VI)) (CAS No.: 18540-29-9)	參考IEC 62321-7-2: 2017，以紫外光-可見光分光光度計分析。(With reference to IEC 62321-7-2: 2017, analysis was performed by UV-VIS.)	mg/kg	8	n.d.	1000
一溴聯苯 (Monobromobiphenyl)	參考IEC 62321-6: 2015，以氣相層析儀/質譜儀分析。(With reference to IEC 62321-6: 2015, analysis was performed by GC/MS.)	mg/kg	5	n.d.	-
二溴聯苯 (Dibromobiphenyl)		mg/kg	5	n.d.	-
三溴聯苯 (Tribromobiphenyl)		mg/kg	5	n.d.	-
四溴聯苯 (Tetrabromobiphenyl)		mg/kg	5	n.d.	-
五溴聯苯 (Pentabromobiphenyl)		mg/kg	5	n.d.	-
六溴聯苯 (Hexabromobiphenyl)		mg/kg	5	n.d.	-
七溴聯苯 (Heptabromobiphenyl)		mg/kg	5	n.d.	-
八溴聯苯 (Octabromobiphenyl)		mg/kg	5	n.d.	-
九溴聯苯 (Nonabromobiphenyl)		mg/kg	5	n.d.	-
十溴聯苯 (Decabromobiphenyl)		mg/kg	5	n.d.	-
多溴聯苯總和 (Sum of PBBs)		mg/kg	-	n.d.	1000

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測試報告
Test Report

明輝化工實業有限公司 (MIN HUEY CHEMICALS INDUSTRIES CO., LTD.)
新北市土城區大安路138巷32號 (NO. 32, LN 138, DA'AN RD., TUCHENG DIST., NEW TAIPEI CITY 23673, TAIWAN)

測試項目 (Test Items)	測試方法 (Method)	單位 (Unit)	MDL	結果 (Result) No.1	限值 (Limit)
一溴聯苯醚 (Monobromodiphenyl ether)	參考IEC 62321-6: 2015，以氣相層析儀/質譜儀分析。(With reference to IEC 62321-6: 2015, analysis was performed by GC/MS.)	mg/kg	5	n.d.	-
二溴聯苯醚 (Dibromodiphenyl ether)		mg/kg	5	n.d.	-
三溴聯苯醚 (Tribromodiphenyl ether)		mg/kg	5	n.d.	-
四溴聯苯醚 (Tetrabromodiphenyl ether)		mg/kg	5	n.d.	-
五溴聯苯醚 (Pentabromodiphenyl ether)		mg/kg	5	n.d.	-
六溴聯苯醚 (Hexabromodiphenyl ether)		mg/kg	5	n.d.	-
七溴聯苯醚 (Heptabromodiphenyl ether)		mg/kg	5	n.d.	-
八溴聯苯醚 (Octabromodiphenyl ether)		mg/kg	5	n.d.	-
九溴聯苯醚 (Nonabromodiphenyl ether)		mg/kg	5	n.d.	-
十溴聯苯醚 (Decabromodiphenyl ether)		mg/kg	5	n.d.	-
多溴聯苯醚總和 (Sum of PBDEs)		mg/kg	-	n.d.	1000
鄰苯二甲酸丁苯甲酯 (BBP) (Butyl benzyl phthalate (BBP)) (CAS No.: 85-68-7)	參考IEC 62321-8: 2017，以氣相層析儀/質譜儀分析。(With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.)	mg/kg	50	n.d.	1000
鄰苯二甲酸二丁酯 (DBP) (Dibutyl phthalate (DBP)) (CAS No.: 84-74-2)		mg/kg	50	n.d.	1000
鄰苯二甲酸二(2-乙基己基)酯 (DEHP) (Di-(2-ethylhexyl) phthalate (DEHP)) (CAS No.: 117-81-7)		mg/kg	50	n.d.	1000
鄰苯二甲酸二異丁酯 (DIBP) (Diisobutyl phthalate (DIBP)) (CAS No.: 84-69-5)		mg/kg	50	n.d.	1000
鄰苯二甲酸二異癸酯 (DIDP) (Diisodecyl phthalate (DIDP)) (CAS No.: 26761-40-0, 68515-49-1)		mg/kg	50	n.d.	-
鄰苯二甲酸二異壬酯 (DINP) (Diisononyl phthalate (DINP)) (CAS No.: 28553-12-0, 68515-48-0)		mg/kg	50	n.d.	-
鄰苯二甲酸二正辛酯 (DNOP) (Di-n-octyl phthalate (DNOP)) (CAS No.: 117-84-0)		mg/kg	50	n.d.	-

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測試報告
Test Report

明輝化工實業有限公司 (MIN HUEY CHEMICALS INDUSTRIES CO., LTD.)
新北市土城區大安路138巷32號 (NO. 32, LN 138, DA'AN RD., TUCHENG DIST., NEW TAIPEI CITY 23673, TAIWAN)

測試項目 (Test Items)	測試方法 (Method)	單位 (Unit)	MDL	結果 (Result) No.1	限值 (Limit)
六溴環十二烷及所有主要被辨別出的異構物 (HBCDD) (α- HBCDD, β- HBCDD, γ- HBCDD) (Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified (α- HBCDD, β- HBCDD, γ- HBCDD)) (CAS No.: 25637-99-4, 3194-55-6 (134237-51-7, 134237-50-6, 134237-52-8))	參考IEC 62321-9: 2021，以氣相層析儀/質譜儀分析。(With reference to IEC 62321-9: 2021, analysis was performed by GC/MS.)	mg/kg	20	n.d.	-

備註(Note)：

1. mg/kg = ppm；0.1wt% = 0.1% = 1000ppm
2. MDL = Method Detection Limit (方法偵測極限值)
3. n.d. = Not Detected (未檢出)；小於MDL / Less than MDL
4. "-" = Not Regulated (無規格值)
5. 除非另有說明，參照ILAC-G8:09/2019，採用簡單二元(w=0)允收規則進行符合性判定；根據此規則，符合性結果之判定係以測試結果與限值做比較。(Unless otherwise stated , the decision rule for conformity reporting is based on Binary Statement for Simple Acceptance Rule (w=0) stated in ILAC-G8:09/2019. According to this rule, the judgement of conformity is based on the comparing test results with limits.)

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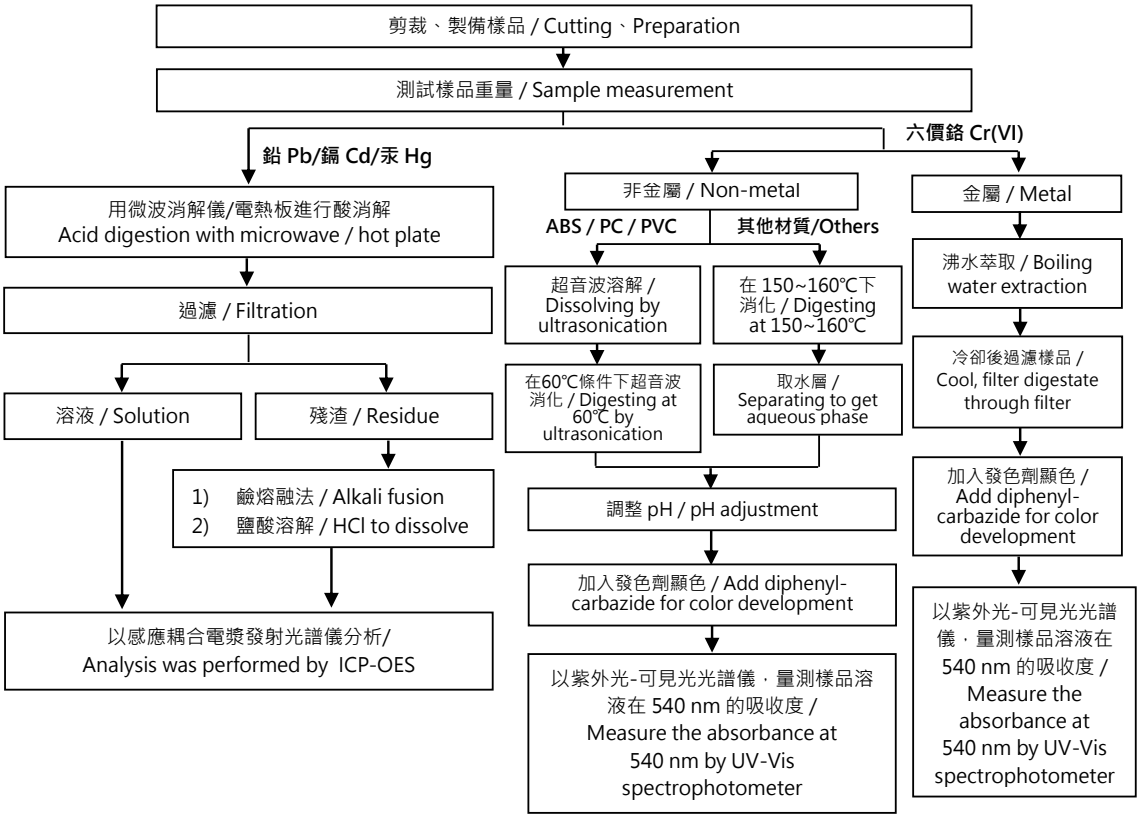
新北市土城區大安路138巷32號 (NO. 32, LN 138, DA'AN RD., TUCHENG DIST., NEW TAIPEI CITY 23673, TAIWAN)

重金屬流程圖 / Analytical flow chart of heavy metal

根據以下的流程圖之條件，樣品已完全溶解。（六價鉻測試方法除外）

These samples were dissolved totally by pre-conditioning method according to below flow chart.

（Cr^{6+} test method excluded）



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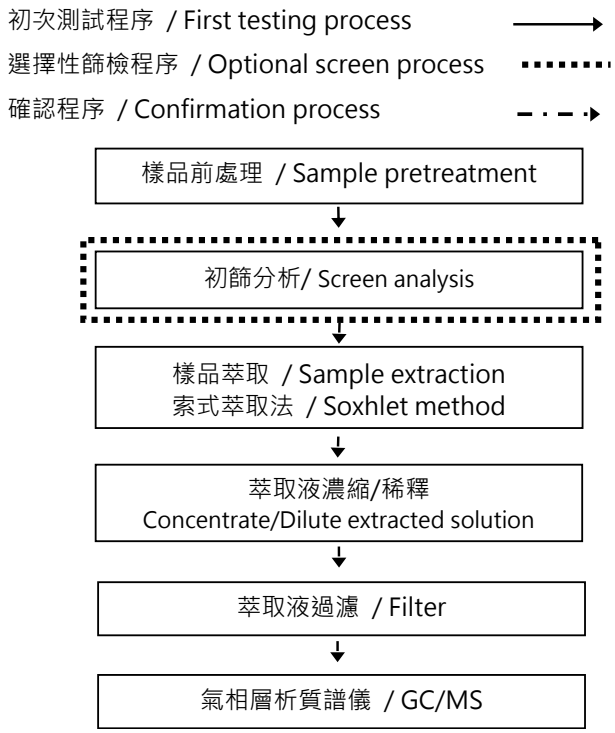
新北市土城區大安路138巷32號 (NO. 32, LN 138, DA'AN RD., TUCHENG DIST., NEW TAIPEI CITY 23673, TAIWAN)

多溴聯苯/多溴聯苯醚分析流程圖 / Analytical flow chart - PBBs/PBDEs



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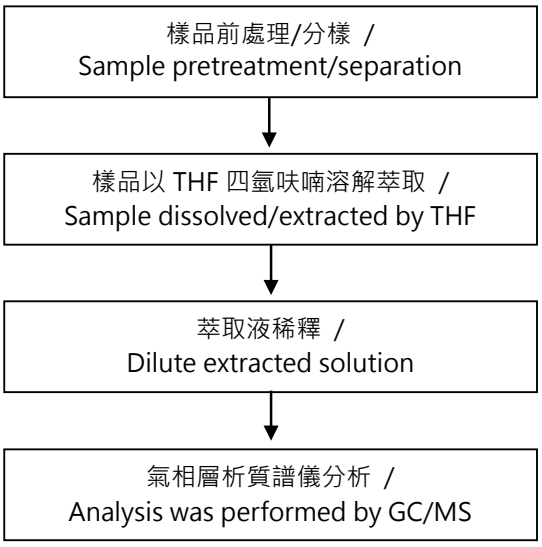
明輝化工實業有限公司 (MIN HUEY CHEMICALS INDUSTRIES CO., LTD.)
新北市土城區大安路138巷32號 (NO. 32, LN 138, DA'AN RD., TUCHENG DIST., NEW TAIPEI CITY 23673, TAIWAN)

可塑劑分析流程圖 / Analytical flow chart - Phthalate

【測試方法/Test method: IEC 62321-8】



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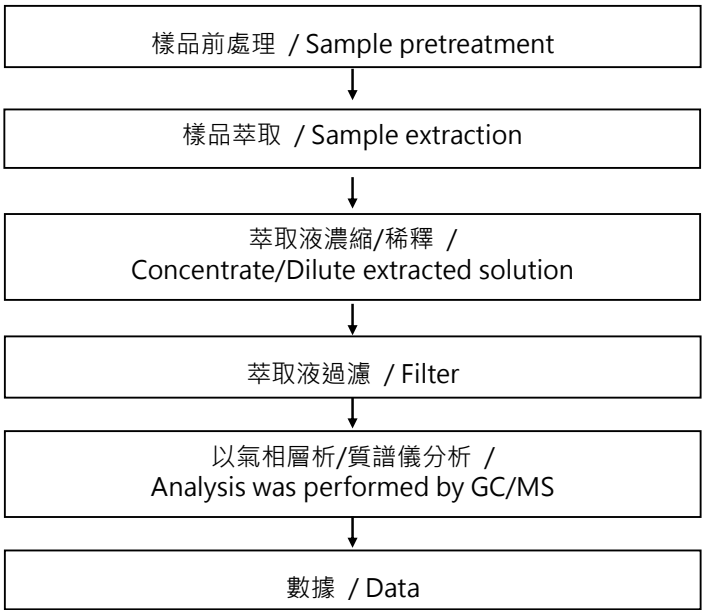
新北市土城區大安路138巷32號 (NO. 32, LN 138, DA'AN RD., TUCHENG DIST., NEW TAIPEI CITY 23673, TAIWAN)

六溴環十二烷分析流程圖 / Analytical flow chart - HBCDD



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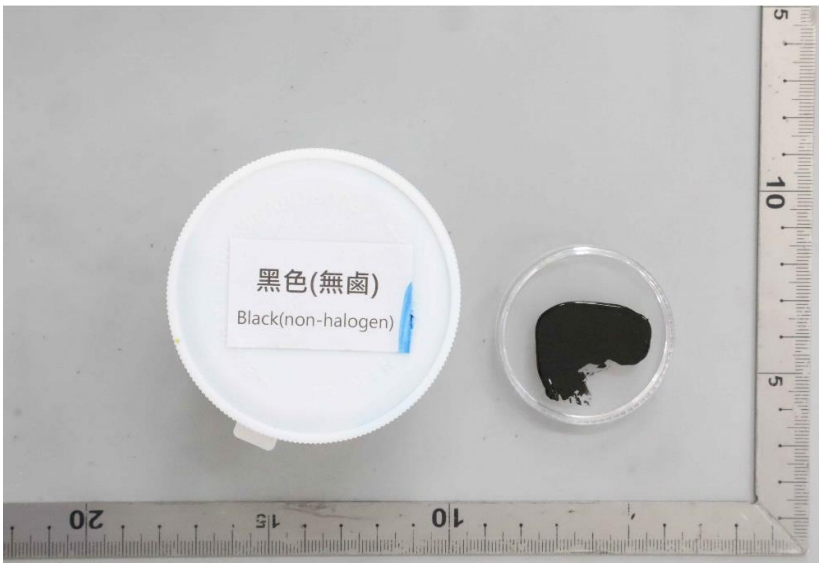
測試報告
Test Report

明輝化工實業有限公司 (MIN HUEY CHEMICALS INDUSTRIES CO., LTD.)
新北市土城區大安路138巷32號 (NO. 32, LN 138, DA'AN RD., TUCHENG DIST., NEW TAIPEI CITY 23673, TAIWAN)

*** 照片中如有箭頭標示，則表示為實際檢測之樣品/部位. ***
(The tested sample / part is marked by an arrow if it's shown on the photo.)

ETR22A04773



** 報告結尾 (End of Report) **

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測試報告
Test Report

明輝化工實業有限公司 (MIN HUEY CHEMICALS INDUSTRIES CO., LTD.)
新北市土城區大安路138巷32號 (NO. 32, LN 138, DA'AN RD., TUCHENG DIST., NEW TAIPEI CITY 23673, TAIWAN)

以下測試樣品係由申請廠商所提供及確認 (The following sample(s) was/were submitted and identified by the applicant as)：

送樣廠商(Sample Submitted By)	:	明輝化工實業有限公司 (MIN HUEY CHEMICALS INDUSTRIES CO., LTD.)
樣品名稱(Sample Name)	:	MIN HUEY SCREEN INK (明輝油墨)
樣品型號(Style/Item No.)	:	黑色 (無鹵) (BLACK (NON-HALOGEN))

==========

收件日(Sample Receiving Date)	:	31-Oct-2022
測試期間(Testing Period)	:	31-Oct-2022 to 04-Nov-2022

測試需求(Test Requested) : 依據客戶指定，測試鹵素-氟、氯、溴、碘。 (As specified by client, to test Halogen-Fluorine, Chlorine, Bromine, Iodine in the submitted sample.)

測試結果(Test Results) : 請參閱下一頁 (Please refer to following pages).

Troy Chang / Department Manager
Signed for and on behalf of
SGS TAIWAN LTD.
Chemical Laboratory - Taipei

CHECK REPORT
PIN CODE: 638495FB

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測試報告
Test Report

明輝化工實業有限公司 (MIN HUEY CHEMICALS INDUSTRIES CO., LTD.)
新北市土城區大安路138巷32號 (NO. 32, LN 138, DA'AN RD., TUCHENG DIST., NEW TAIPEI CITY 23673, TAIWAN)

測試部位敘述 (Test Part Description)

No.1 : 黑色油墨 (BLACK INK)

測試結果 (Test Results)

測試項目 (Test Items)	測試方法 (Method)	單位 (Unit)	MDL	結果 (Result)
				No.1
氟 (F) (Fluorine (F)) (CAS No.: 14762-94-8)	參考BS EN 14582: 2016，以離子層析儀分析。(With reference to BS EN 14582: 2016, analysis was performed by IC.)	mg/kg	50	n.d.
氯 (Cl) (Chlorine (Cl)) (CAS No.: 22537-15-1)	參考BS EN 14582: 2016，以離子層析儀分析。(With reference to BS EN 14582: 2016, analysis was performed by IC.)	mg/kg	50	n.d.
溴 (Br) (Bromine (Br)) (CAS No.: 10097-32-2)	參考BS EN 14582: 2016，以離子層析儀分析。(With reference to BS EN 14582: 2016, analysis was performed by IC.)	mg/kg	50	n.d.
碘 (I) (Iodine (I)) (CAS No.: 14362-44-8)	參考BS EN 14582: 2016，以離子層析儀分析。(With reference to BS EN 14582: 2016, analysis was performed by IC.)	mg/kg	50	n.d.

備註(Note)：

1. mg/kg = ppm；0.1wt% = 0.1% = 1000ppm
2. MDL = Method Detection Limit (方法偵測極限值)
3. n.d. = Not Detected (未檢出)；小於MDL / Less than MDL

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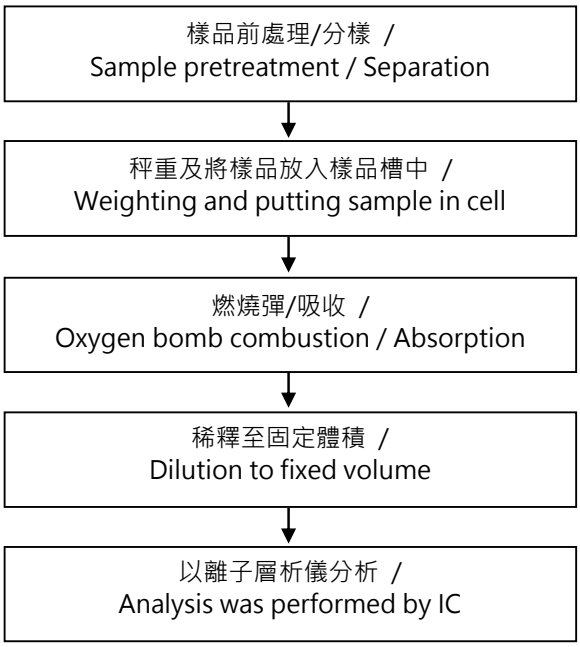
新北市土城區大安路138巷32號 (NO. 32, LN 138, DA'AN RD., TUCHENG DIST., NEW TAIPEI CITY 23673, TAIWAN)

鹵素分析流程圖 / Analytical flow chart - Halogen



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測試報告
Test Report

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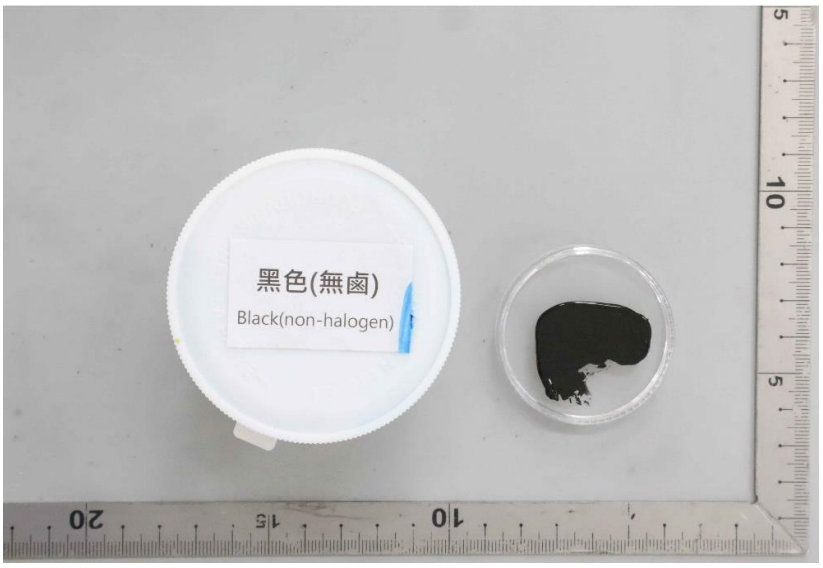
*** 照片中如有箭頭標示，則表示為實際檢測之樣品/部位. ***
(The tested sample / part is marked by an arrow if it's shown on the photo.)

ETR22A04774



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測試報告
Test Report

號碼(No.): ETR22A04745　　日期(Date): 07-Nov-2022　　

明輝化工實業有限公司 (MIN HUEY CHEMICALS INDUSTRIES CO., LTD.)
新北市土城區大安路138巷32號 (NO. 32, LN 138, DA'AN RD., TUCHENG DIST., NEW TAIPEI CITY 23673, TAIWAN)

以下測試樣品係由申請廠商所提供及確認 (The following sample(s) was/were submitted and identified by the applicant as)：

送樣廠商(Sample Submitted By)	:	明輝化工實業有限公司 (MIN HUEY CHEMICALS INDUSTRIES CO., LTD.)
樣品名稱(Sample Name)	:	MIN HUEY SCREEN INK (明輝油墨)
樣品型號(Style/Item No.)	:	白色 (無鹵) (WHITE (NON-HALOGEN))

==========

收件日(Sample Receiving Date)	:	31-Oct-2022
測試期間(Testing Period)	:	31-Oct-2022 to 07-Nov-2022

測試需求(Test Requested) :

(1) 依據客戶指定，參考RoHS 2011/65/EU Annex II及其修訂指令(EU) 2015/863測試鎘、鉛、汞、六價鉻、多溴聯苯、多溴聯苯醚, DBP, BBP, DEHP, DIBP。 (As specified by client, with reference to RoHS 2011/65/EU Annex II and amending Directive (EU) 2015/863 to determine Cadmium, Lead, Mercury, Cr(VI), PBBs, PBDEs, DBP, BBP, DEHP, DIBP contents in the submitted sample(s).)

(2) 其他測試項目請見下一頁。 (Please refer to next pages for the other item(s).)

測試結果(Test Results) : 請參閱下一頁 (Please refer to following pages.)

結　論(Conclusion) :

(1) 根據客戶所提供的樣品，其鎘、鉛、汞、六價鉻、多溴聯苯、多溴聯苯醚, DBP, BBP, DEHP, DIBP的測試結果符合RoHS 2011/65/EU Annex II暨其修訂指令(EU) 2015/863之限值要求。 (Based on the performed tests on submitted sample(s), the test results of Cadmium, Lead, Mercury, Cr(VI), PBBs, PBDEs, DBP, BBP, DEHP, DIBP comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.)

Troy Chang / Department Manager
Signed for and on behalf of
SGS TAIWAN LTD.
Chemical Laboratory - Taipei

CHECK REPORT
PIN CODE: B064DF5B

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Test Report

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新北市土城區大安路138巷32號 (NO. 32, LN 138, DA'AN RD., TUCHENG DIST., NEW TAIPEI CITY 23673, TAIWAN)

測試部位敘述 (Test Part Description)

No.1 : 白色油墨 (WHITE INK)

測試結果 (Test Results)

測試項目 (Test Items)	測試方法 (Method)	單位 (Unit)	MDL	結果 (Result) No.1	限值 (Limit)
鎘 (Cd) (Cadmium (Cd)) (CAS No.: 7440-43-9)	參考IEC 62321-5: 2013，以感應耦合電漿發射光譜儀分析。(With reference to IEC 62321-5: 2013, analysis was performed by ICP-OES.)	mg/kg	2	n.d.	100
鉛 (Pb) (Lead (Pb)) (CAS No.: 7439-92-1)		mg/kg	2	n.d.	1000
汞 (Hg) (Mercury (Hg)) (CAS No.: 7439-97-6)	參考IEC 62321-4: 2013+ AMD1: 2017，以感應耦合電漿發射光譜儀分析。(With reference to IEC 62321-4: 2013+ AMD1: 2017, analysis was performed by ICP-OES.)	mg/kg	2	n.d.	1000
六價鉻 Cr(VI) (Hexavalent Chromium Cr(VI)) (CAS No.: 18540-29-9)	參考IEC 62321-7-2: 2017，以紫外光-可見光分光光度計分析。(With reference to IEC 62321-7-2: 2017, analysis was performed by UV-VIS.)	mg/kg	8	n.d.	1000
一溴聯苯 (Monobromobiphenyl)	參考IEC 62321-6: 2015，以氣相層析儀/質譜儀分析。(With reference to IEC 62321-6: 2015, analysis was performed by GC/MS.)	mg/kg	5	n.d.	-
二溴聯苯 (Dibromobiphenyl)		mg/kg	5	n.d.	-
三溴聯苯 (Tribromobiphenyl)		mg/kg	5	n.d.	-
四溴聯苯 (Tetrabromobiphenyl)		mg/kg	5	n.d.	-
五溴聯苯 (Pentabromobiphenyl)		mg/kg	5	n.d.	-
六溴聯苯 (Hexabromobiphenyl)		mg/kg	5	n.d.	-
七溴聯苯 (Heptabromobiphenyl)		mg/kg	5	n.d.	-
八溴聯苯 (Octabromobiphenyl)		mg/kg	5	n.d.	-
九溴聯苯 (Nonabromobiphenyl)		mg/kg	5	n.d.	-
十溴聯苯 (Decabromobiphenyl)		mg/kg	5	n.d.	-
多溴聯苯總和 (Sum of PBBs)		mg/kg	-	n.d.	1000

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測試項目 (Test Items)	測試方法 (Method)	單位 (Unit)	MDL	結果 (Result) No.1	限值 (Limit)
一溴聯苯醚 (Monobromodiphenyl ether)	參考IEC 62321-6: 2015，以氣相層析儀/質譜儀分析。(With reference to IEC 62321-6: 2015, analysis was performed by GC/MS.)	mg/kg	5	n.d.	-
二溴聯苯醚 (Dibromodiphenyl ether)		mg/kg	5	n.d.	-
三溴聯苯醚 (Tribromodiphenyl ether)		mg/kg	5	n.d.	-
四溴聯苯醚 (Tetrabromodiphenyl ether)		mg/kg	5	n.d.	-
五溴聯苯醚 (Pentabromodiphenyl ether)		mg/kg	5	n.d.	-
六溴聯苯醚 (Hexabromodiphenyl ether)		mg/kg	5	n.d.	-
七溴聯苯醚 (Heptabromodiphenyl ether)		mg/kg	5	n.d.	-
八溴聯苯醚 (Octabromodiphenyl ether)		mg/kg	5	n.d.	-
九溴聯苯醚 (Nonabromodiphenyl ether)		mg/kg	5	n.d.	-
十溴聯苯醚 (Decabromodiphenyl ether)		mg/kg	5	n.d.	-
多溴聯苯醚總和 (Sum of PBDEs)		mg/kg	-	n.d.	1000
鄰苯二甲酸丁苯甲酯 (BBP) (Butyl benzyl phthalate (BBP)) (CAS No.: 85-68-7)	參考IEC 62321-8: 2017，以氣相層析儀/質譜儀分析。(With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.)	mg/kg	50	n.d.	1000
鄰苯二甲酸二丁酯 (DBP) (Dibutyl phthalate (DBP)) (CAS No.: 84-74-2)		mg/kg	50	n.d.	1000
鄰苯二甲酸二(2-乙基己基)酯 (DEHP) (Di-(2-ethylhexyl) phthalate (DEHP)) (CAS No.: 117-81-7)		mg/kg	50	n.d.	1000
鄰苯二甲酸二異丁酯 (DIBP) (Diisobutyl phthalate (DIBP)) (CAS No.: 84-69-5)		mg/kg	50	n.d.	1000
鄰苯二甲酸二異癸酯 (DIDP) (Diisodecyl phthalate (DIDP)) (CAS No.: 26761-40-0, 68515-49-1)		mg/kg	50	n.d.	-
鄰苯二甲酸二異壬酯 (DINP) (Diisononyl phthalate (DINP)) (CAS No.: 28553-12-0, 68515-48-0)		mg/kg	50	n.d.	-
鄰苯二甲酸二正辛酯 (DNOP) (Di-n-octyl phthalate (DNOP)) (CAS No.: 117-84-0)		mg/kg	50	n.d.	-

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測試報告
Test Report

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新北市土城區大安路138巷32號 (NO. 32, LN 138, DA'AN RD., TUCHENG DIST., NEW TAIPEI CITY 23673, TAIWAN)

測試項目 (Test Items)	測試方法 (Method)	單位 (Unit)	MDL	結果 (Result) No.1	限值 (Limit)
六溴環十二烷及所有主要被辨別出的異構物 (HBCDD) (α- HBCDD, β- HBCDD, γ- HBCDD) (Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified (α- HBCDD, β- HBCDD, γ- HBCDD)) (CAS No.: 25637-99-4, 3194-55-6 (134237-51-7, 134237-50-6, 134237-52-8))	參考IEC 62321-9: 2021，以氣相層析儀/質譜儀分析。(With reference to IEC 62321-9: 2021, analysis was performed by GC/MS.)	mg/kg	20	n.d.	-

備註(Note)：

1. mg/kg = ppm；0.1wt% = 0.1% = 1000ppm
2. MDL = Method Detection Limit (方法偵測極限值)
3. n.d. = Not Detected (未檢出)；小於MDL / Less than MDL
4. "-" = Not Regulated (無規格值)
5. 除非另有說明，參照ILAC-G8:09/2019，採用簡單二元(w=0)允收規則進行符合性判定；根據此規則，符合性結果之判定係以測試結果與限值做比較。(Unless otherwise stated , the decision rule for conformity reporting is based on Binary Statement for Simple Acceptance Rule (w=0) stated in ILAC-G8:09/2019. According to this rule, the judgement of conformity is based on the comparing test results with limits.)

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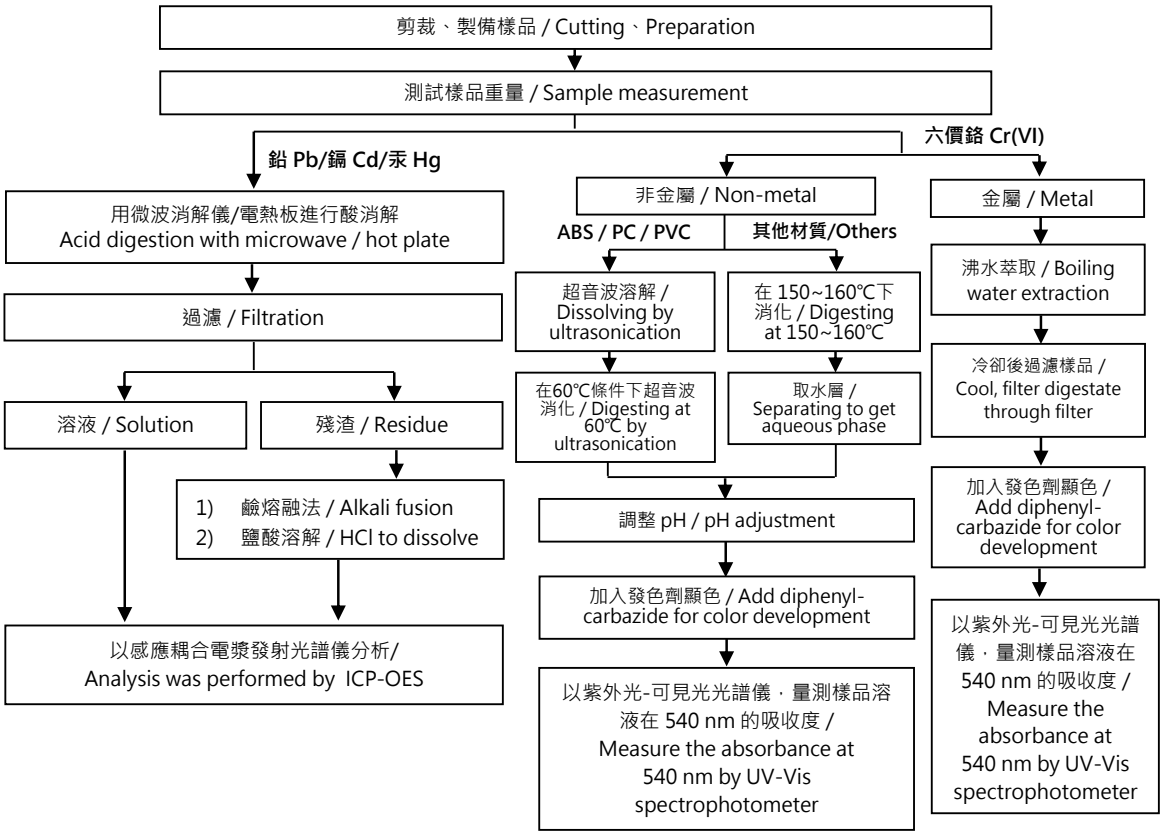
重金屬流程圖 / Analytical flow chart of heavy metal

根據以下的流程圖之條件，樣品已完全溶解。（六價鉻測試方法除外）

These samples were dissolved totally by pre-conditioning method according to below flow chart.
（Cr^{6+} test method excluded）



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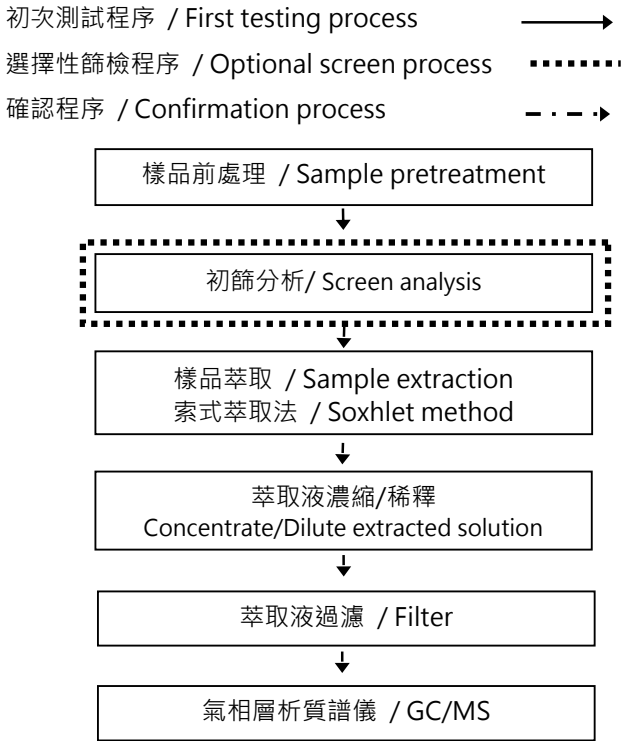
多溴聯苯/多溴聯苯醚分析流程圖 / Analytical flow chart - PBBs/PBDEs



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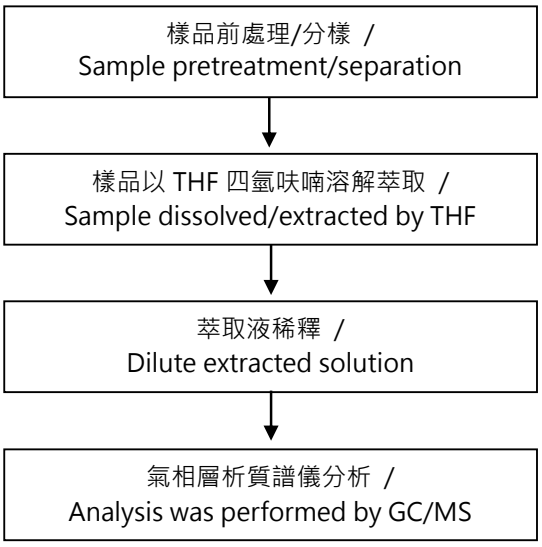
可塑劑分析流程圖 / Analytical flow chart - Phthalate

【測試方法/Test method: IEC 62321-8】



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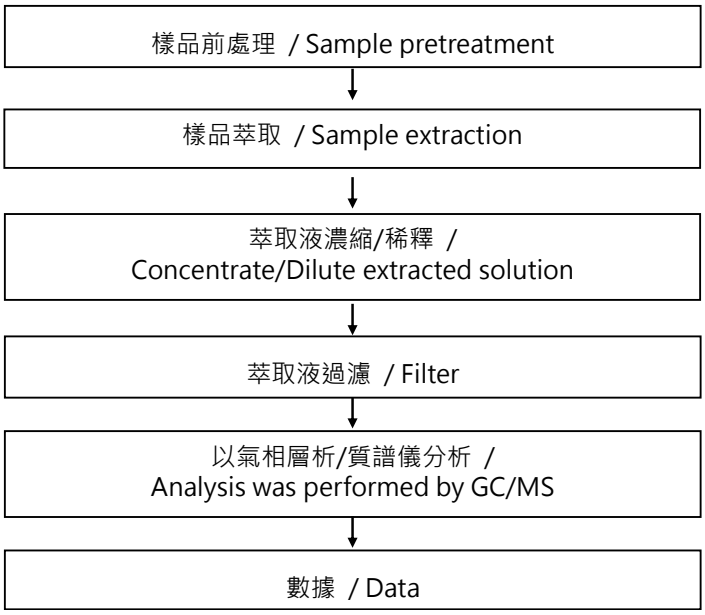
六溴環十二烷分析流程圖 / Analytical flow chart - HBCDD



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*** 照片中如有箭頭標示，則表示為實際檢測之樣品/部位. ***
(The tested sample / part is marked by an arrow if it's shown on the photo.)

ETR22A04745



** 報告結尾 (End of Report) **

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測試報告
Test Report

明輝化工實業有限公司 (MIN HUEY CHEMICALS INDUSTRIES CO., LTD.)
新北市土城區大安路138巷32號 (NO. 32, LN 138, DA'AN RD., TUCHENG DIST., NEW TAIPEI CITY 23673, TAIWAN)

以下測試樣品係由申請廠商所提供及確認 (The following sample(s) was/were submitted and identified by the applicant as)：

送樣廠商(Sample Submitted By)	:	明輝化工實業有限公司 (MIN HUEY CHEMICALS INDUSTRIES CO., LTD.)
樣品名稱(Sample Name)	:	MIN HUEY SCREEN INK (明輝油墨)
樣品型號(Style/Item No.)	:	白色 (無鹵) (WHITE (NON-HALOGEN))

==========

收件日(Sample Receiving Date)	:	31-Oct-2022
測試期間(Testing Period)	:	31-Oct-2022 to 07-Nov-2022

測試需求(Test Requested) : 依據客戶指定，測試鹵素-氟、氯、溴、碘。 (As specified by client, to test Halogen-Fluorine, Chlorine, Bromine, Iodine in the submitted sample.)

測試結果(Test Results) : 請參閱下一頁 (Please refer to following pages).

Troy Chang / Department Manager
Signed for and on behalf of
SGS TAIWAN LTD.
Chemical Laboratory - Taipei

CHECK REPORT
PIN CODE: CA040B3A

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測試部位敘述 (Test Part Description)

No.1 : 白色油墨 (WHITE INK)

測試結果 (Test Results)

測試項目 (Test Items)	測試方法 (Method)	單位 (Unit)	MDL	結果 (Result)
				No.1
氟 (F) (Fluorine (F)) (CAS No.: 14762-94-8)	參考BS EN 14582: 2016，以離子層析儀分析。(With reference to BS EN 14582: 2016, analysis was performed by IC.)	mg/kg	50	192
氯 (Cl) (Chlorine (Cl)) (CAS No.: 22537-15-1)	參考BS EN 14582: 2016，以離子層析儀分析。(With reference to BS EN 14582: 2016, analysis was performed by IC.)	mg/kg	50	59.5
溴 (Br) (Bromine (Br)) (CAS No.: 10097-32-2)	參考BS EN 14582: 2016，以離子層析儀分析。(With reference to BS EN 14582: 2016, analysis was performed by IC.)	mg/kg	50	n.d.
碘 (I) (Iodine (I)) (CAS No.: 14362-44-8)	參考BS EN 14582: 2016，以離子層析儀分析。(With reference to BS EN 14582: 2016, analysis was performed by IC.)	mg/kg	50	n.d.

備註(Note)：

1. mg/kg = ppm；0.1wt% = 0.1% = 1000ppm
2. MDL = Method Detection Limit (方法偵測極限值)
3. n.d. = Not Detected (未檢出)；小於MDL / Less than MDL

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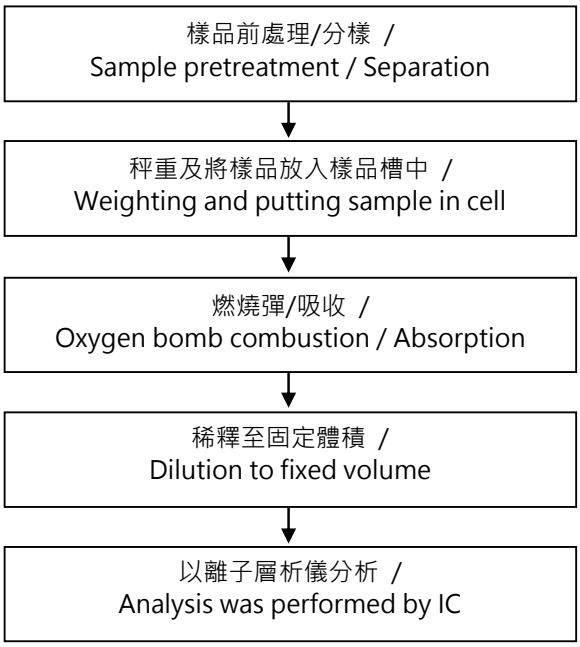
鹵素分析流程圖 / Analytical flow chart - Halogen



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*** 照片中如有箭頭標示，則表示為實際檢測之樣品/部位. ***
(The tested sample / part is marked by an arrow if it's shown on the photo.)

ETR22A04746



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