*注意事項:

STAND BRACKET Delta below~2.50 皆允收

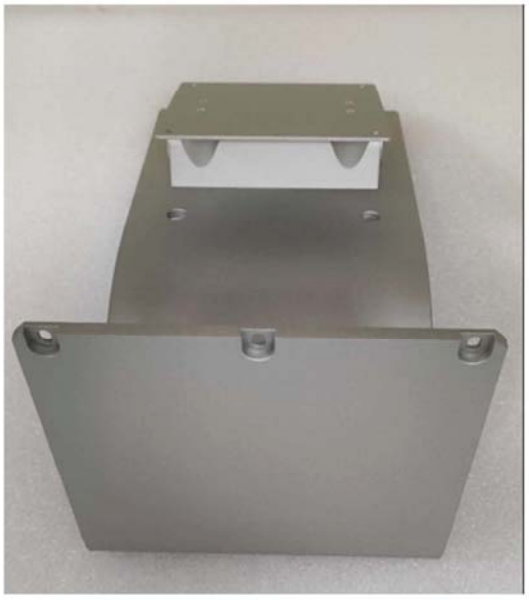


⇧此為限度樣

設計驗證
工程課
2024-12-24
發行
紅緯科技開發股份有限公司










設計驗證
工程課
2024-12-24
發行
[illegible]科技[illegible]股份有限公司

雄業實業股份有限公司

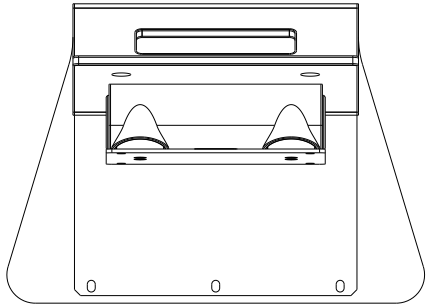
樣 品 承 認 書

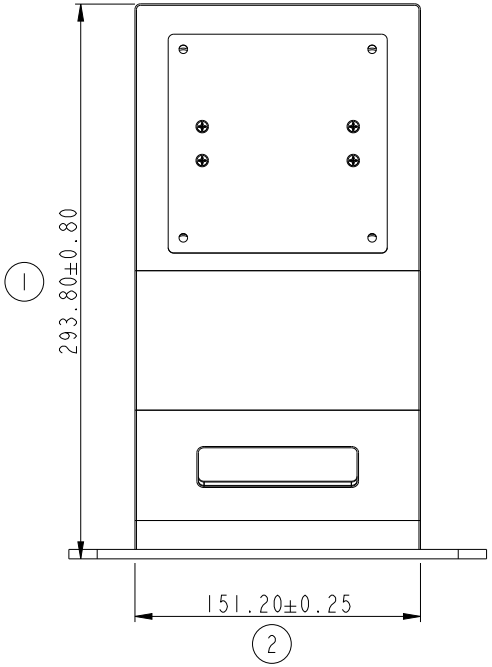


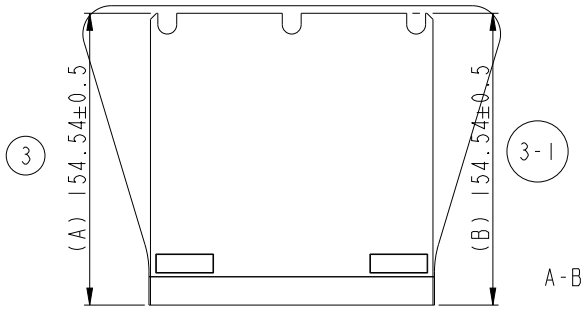
客　　戶：	鈺緯科技
料　　號：	2AAD3320134(M2862)
品　　名：	STAND SUB 組立
日　　期：	113/12/3
送樣數量：	3　　PCS



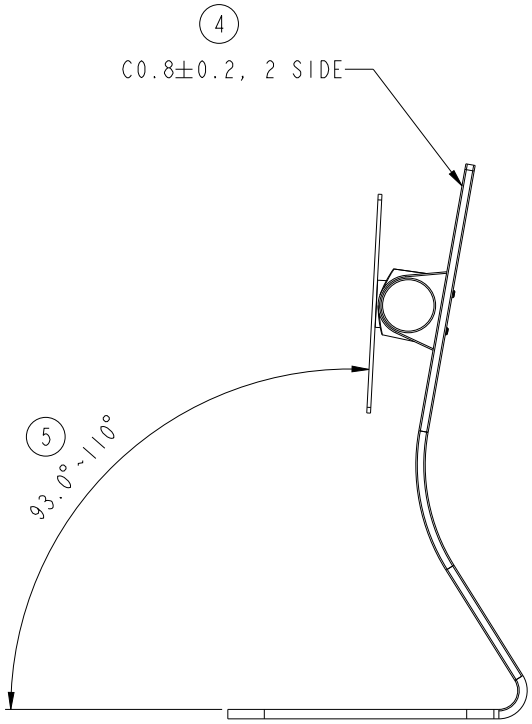
REV.	DATE	DESCRIPTION	BY	APPD
A	2017/12/27	1.REMOVE RUBBER FOOD ASSEMBLY *4 2.UPDATED PART NO. 2AAD3320034 3.MODIFY STAND BRACKET SCREW HOLE.	Laslie	

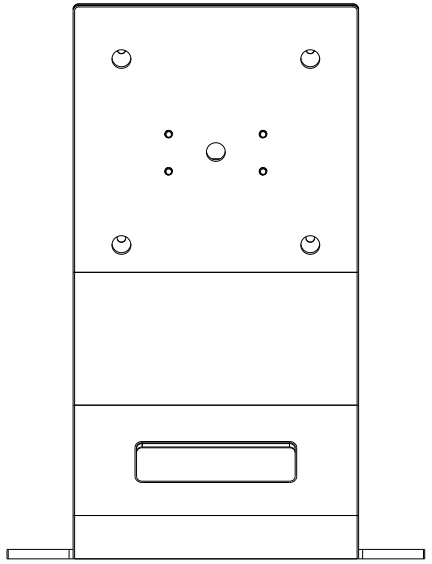






A-B or B-A≦0.3mm



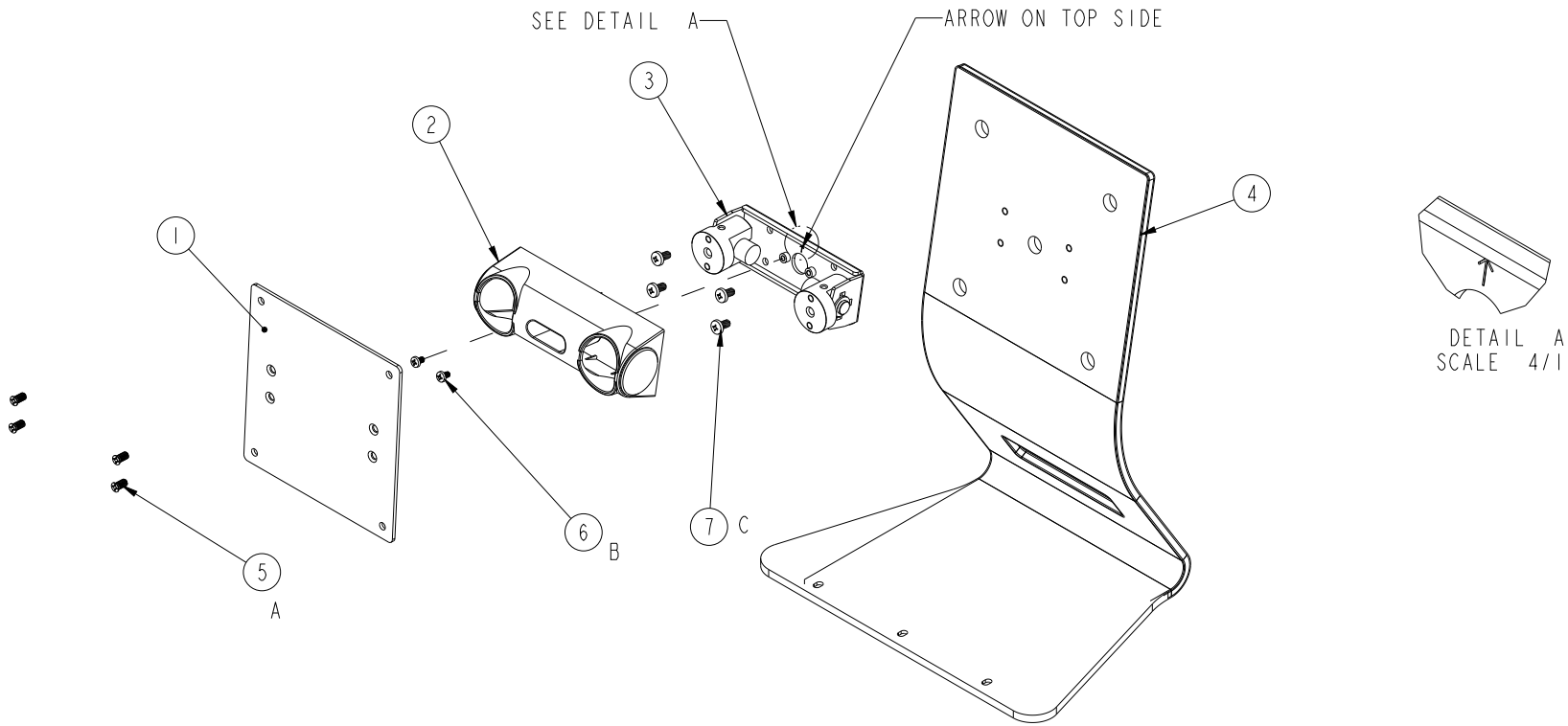


設計驗證
工程課
2024-12-24
發行
鈺華科技開發股份有限公司

NOTE:
1.Painting Color: Silver, PHILIPS NO. 11618..
2.RoHS Compliant.
3.IQC Inspection Document NO.:QWI-023.

THIRD ANGLE PROJECTION		UNITS: mm	SCALE: 1/1	SHEET: 1 OF 5	MODEL NO.:RGP2422AMI
		MATERIAL:		TREATMENT:	
DSGD by	Jay	2017/12/27	PART NAME:	STAND SUB ASSY	
APPD by	Laslie	2024/12/23	PART NO.: 2AAD3320134		VER. 0
APPD NO.: M2862	FILE NAME: 24-038_STAND_SUB	DIVA Laboratories ,Ltd.			

REV.	DATE	DESCRIPTION	BY	APPD



NOTE:
1.A TORQUE TO 11~13 kgf.cm
2.B TORQUE TO 7~9 kgf.cm
3.C TORQUE TO 11~13 kgf.cm

7	3GSP4008P15	SCREW (M4*8,PAN,W/SP-WSR,Ni)	4
6	3GSM3006B15	SCREW (M3*6,BIND,Ni)	2
5	3GSM4008X15	SCREW (M4*8,FLAT 110°,Ni,NYLOK)	4
4	3MD332ME04A	STAND BRACKET (24", 11618 SILVER)	1
3	3MD332ME06A	HINGE (24",PHILIPS)	1
2	3MD332PA050	HINGE COVER (11618 SILVER)	1
1	3MD332ME050	VESA BRACKET (100*100, 11618 SILVER)	1
	PART NO.	DESCRIPTION	QTY
2AAD3320034, STAND SUB ASSEMBLY			

設計驗證
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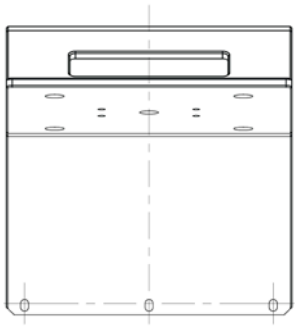
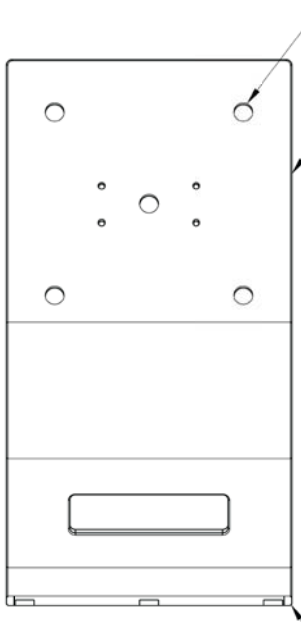
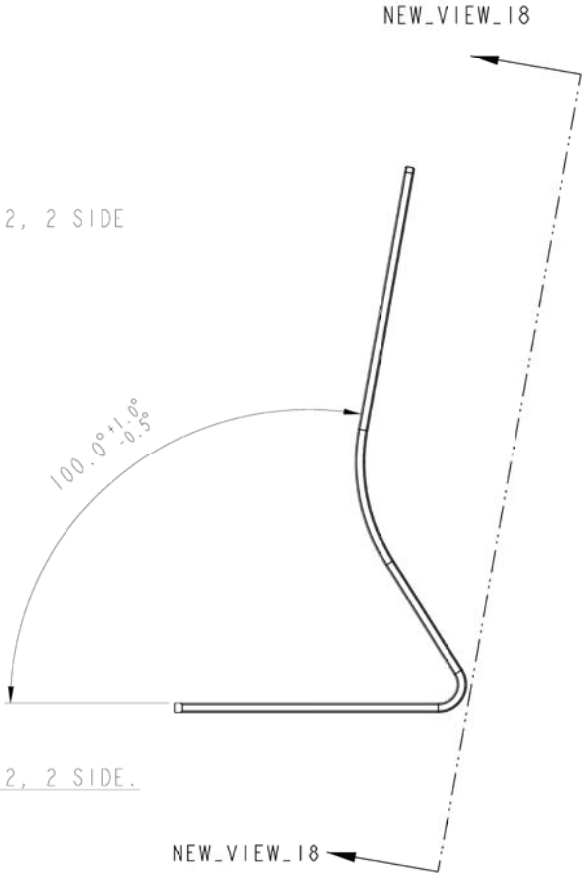
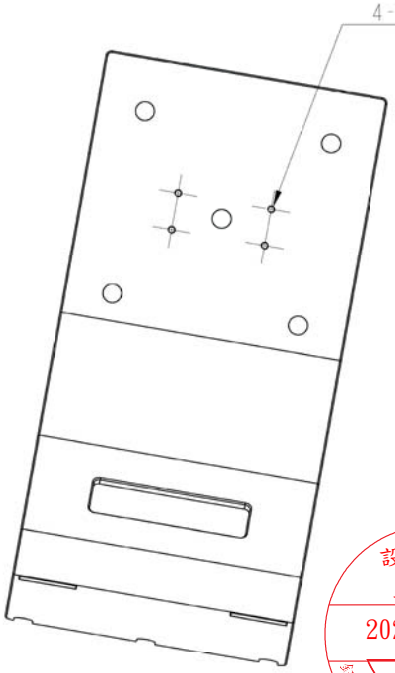
THIRD ANGLE PROJECTION	UNITS: mm	SCALE: 1/1	SHEET: 2 OF 5	MODEL NO.:RGP2422AM1
	MATERIAL:		TREATMENT:	
DSGD by Laslie	2017/12/27	PART NAME: STAND SUB ASSY		
APPD by Chen	2024/12/23	PART NO.: 2AAD3320134		VER. 0
APPD NO.: M2862	FILE NAME: 24-038_STAND_SUB	DNA Laboratories ,Ltd.		

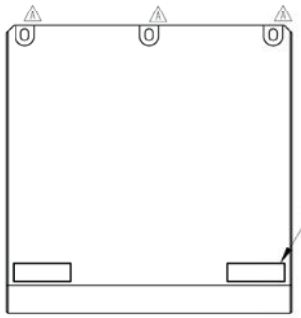
REV.	DATE	DESCRIPTION	BY	APPD
A	2017/12/17	MODIFY THE SCREW HOLE	Laslie	











NOTE:
1.Painting Color: Silver, PHILIPS NO. 11618..
2.RoHS Compliant.
3.IQC Inspection Document NO.:QWI-023.

設計驗證
工程課
2024-12-24
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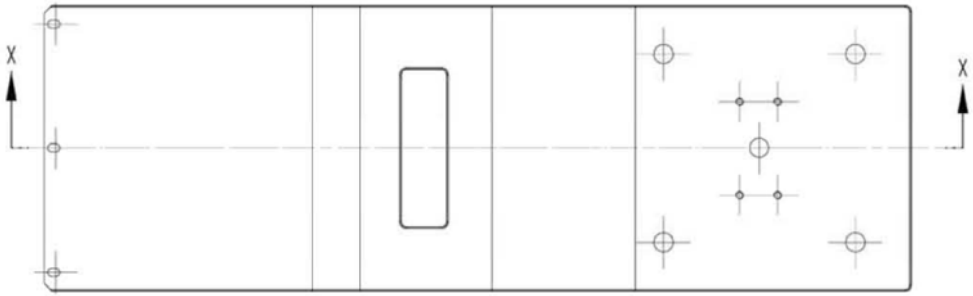
THIRD ANGLE PROJECTION	UNITS: mm	SCALE: 1/1	SHEET: 1 OF 2	MODEL NO.: RGP2422AMI
	MATERIAL:		TREATMENT:	
DSGD by: Laslie	2017/12/27	PART NAME: STAND BRACKET		
APPD by:		PART NO.: 3MD332ME04A		VER. 0
APPD NO.: M2662	FILE NAME: 24-038_STAND_BRACKET	DIVA Laboratories, Ltd.		

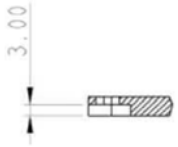
REV.	DATE	DESCRIPTION	BY	APPD
A	2017/12/17	MODIFY THE SCREW HOLE	Laslie	



SEE DETAIL A

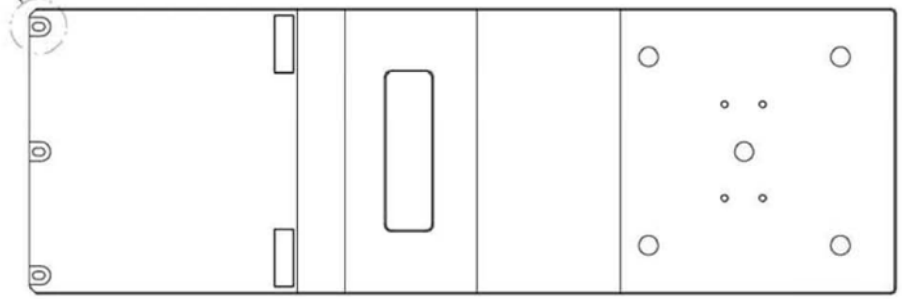


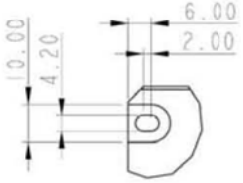
SECTION X-X



DETAIL A
SCALE 2/1

SEE DETAIL B





DETAIL B
SCALE 2/1

設計驗證
工程課
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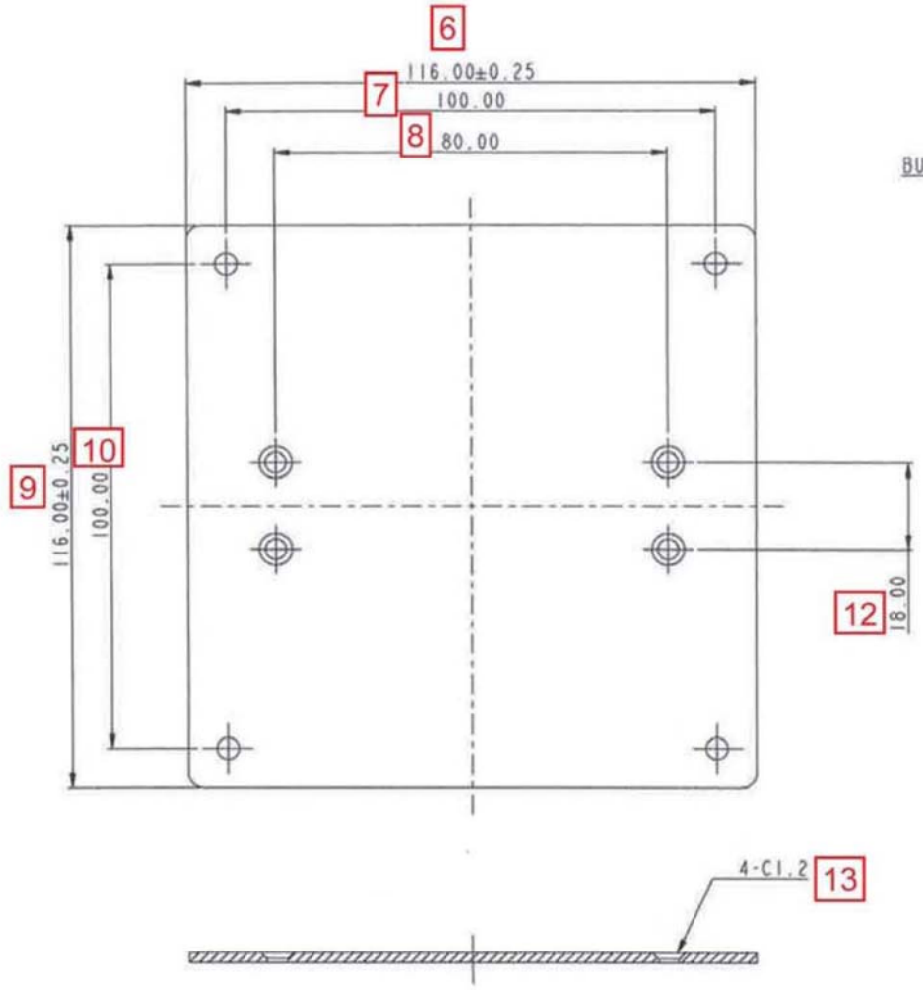
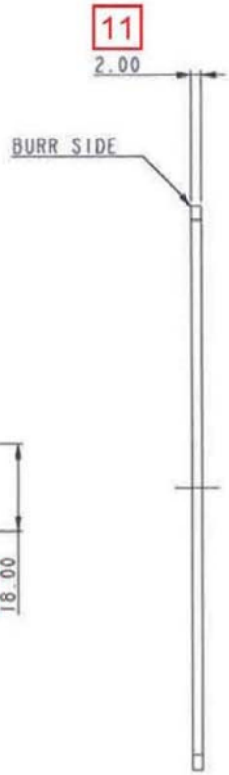
鈺華科技開發股份有限公司

THIRD ANGLE PROJECTION	UNITS: mm	SCALE: 1/1	SHEET: 2 OF 2	MODEL NO.:RGP2422AM1
	MATERIAL:		TREATMENT:	
DSGD by: Laslie	2017/12/27	PART NAME: STAND BRACKET		
APPD by:		PART NO.: 3MD332ME04A		VER. 0
APPD NO.: M2862	FILE NAME: 24-038_STAND_BRACKET	DIVA Laboratories ,Ltd.		

REV.	DATE	DESCRIPTION	BY	APPD





SECTION A-A

NOTE:
1.Painting:Silver, PHILIPS NO. 11618.
2.RoHS Compliant.
3.IQC Inspection Document NO.:QWI-023.

設計驗證
工程課
2024-12-24
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佰華科技開發股份有限公司

THIRD ANGLE PROJECTION	UNITS:mm	SCALE: 1/1	SHEET: 1 OF 1	MODEL NO.:RGP2422AM1
	MATERIAL: SECC t=2.0		TREATMENT:	
DSGD by Lastia	2017/10/12	PART NAME:	VESA PLATE	
APPD by		PART NO.:	3MD332ME050	VER. 0
APPD No.: M2825	FILE NAME:	DIA Laboratories ,Ltd.		

Test Result	

DIVA FAI DATA SHEET

	Part Number : 2AAD3320134 (M2862)	Supplier : 雄業	Date: 2024/12/3	
	Part Description : STAND SUB 組立		Cavity / Tool # :	
	Revision : 0	Material Spec: SPCC T=5.0mm	Inspector: 李宥廷	

MOI-Method of inspection abbreviation: HG = Height gauge, MIC = Micrometer, DC = Dial Caliper, P = Protractor, OC = Optical Comparator, CG = Checking Gauge, CMM = Coordinate Measuring Machine, OMM = Optical Coordinate Measuring Machine, HT = Hardness Trester, TG = Thickness Gauge, VIS = V D

OTHER:

DRAWING SPECIFICATIONS						INSPECTION RESULTS							INSPECTION ANALYSIS					
						Sample Number							% Tolerance		Alert/Rej		Supplier	RD Engineering
ITEM	LOCATION	NOMINAL	+TOL	-TOL	Method	1	2	3	1	2	3	Mean	UPPER	LOWER	HIGH	LOW	Remarks	Disposition
1	E3	293.80	0.80	0.80		293.750	293.770	293.750	-0.050	-0.030	-0.050	293.757	0%	6%				
2	F4	151.20	0.25	0.25		151.240	151.200	151.220	0.040	0.000	0.020	151.220	16%	0%				
3	G3	154.54	0.50	0.50		154.500	154.500	154.520	-0.040	-0.040	-0.020	154.507	0%	8%				
3-1	G5	154.54	0.50	0.50		154.560	154.500	154.540	0.020	-0.040	0.000	154.533	4%	8%				
4	C7	0.80	0.20	0.20		0.770	0.780	0.780	-0.030	-0.020	-0.020	0.777	0%	15%				
5	E6	93°	~110°			93.000	110.230	98.500	#####	#####	#####	100.577						
6	B5	116.00	0.25	0.25		115.930	115.900	115.940	-0.070	-0.100	-0.060	115.923	0%	40%				
7	B5	100.00	0.30	0.30		100.010	100.000	100.000	0.010	0.000	0.000	100.003	3%	0%				
8	B5	80.00	0.30	0.30		79.990	80.000	80.000	-0.010	0.000	0.000	79.997	0%	3%				
9	D2	116.00	0.25	0.25		115.980	115.980	116.000	-0.020	-0.020	0.000	115.987	0%	8%				
10	D3	100.00	0.30	0.30		99.960	100.000	99.980	-0.040	0.000	-0.020	99.980	0%	13%				
11	B8	2.00	0.20	0.20		2.040	2.040	2.020	0.040	0.040	0.020	2.033	20%	0%				
12	E7	18.00	0.20	0.20		17.950	18.000	17.970	-0.050	0.000	-0.030	17.973	0%	25%				
13	G6	1.20	0.20	0.20		1.180	1.210	1.200	-0.020	0.010	0.000	1.197	5%	10%				
14	E7	99.5°	~101°			100.090	100.500	100.100	#####	#####	#####	100.230						

Instructions:
1. Inspector mest fillout the yellow area.
2. The table will automatically calculate the data in green area.

雄業實業股份有限公司

■ 組立
□ 沖壓

製程作業標準書

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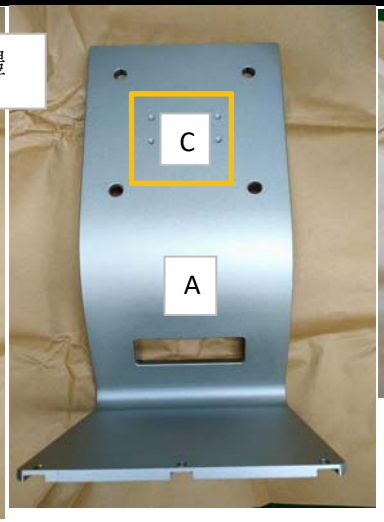
文件編號: PA-SOP-2AAD3320134 A/0

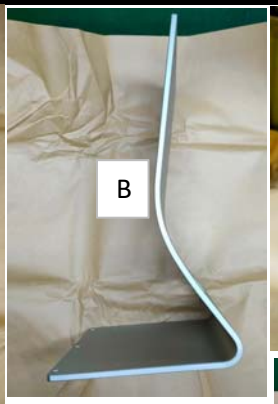
客戶	鈺緯	機種		料號	2AAD3320134 (M2862)			品名	STAND SUB 組立
工段		作業別	外觀檢查	機台編號		噸數		材質	SPCC*5.0

使用工具 / 機台設定		零組件 / 數量	
1		1	
2		2	
3		3	
4		4	

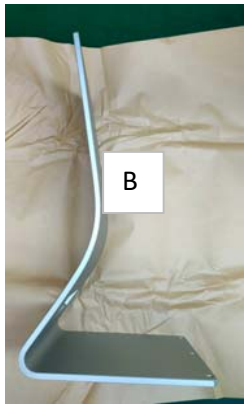
工序內容	
1	3MD332ME04A-主體 (SPCC)
2	3MD332ME050-配件 (SECC)
3	烤漆-全烤 岳是L腳架銀織紋
4	
5	
6	
7	
8	
9	
10	

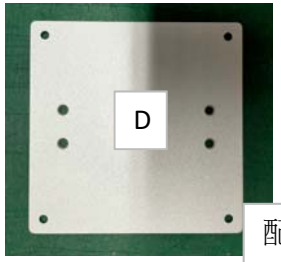




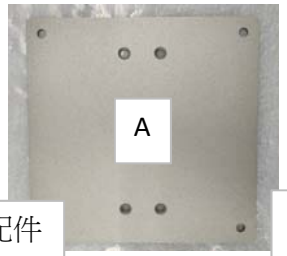








配件



沙拉孔向外鎖螺絲

作業重點	
1	刮傷小於0.15MM不計 大於0.15-0.25MM一邊一個全部2個
2	汙點小於0.35不計 大於0.5mm一邊一個全部2個
3	烤漆異物小於0.5允許一個
4	由於C級面在底部與背部遮蓋處故
5	刮傷部分:無感刮傷＜5公分可
6	有感刮傷<2公分(不露底材)可壓傷<1mm顆粒雜質<0.7

不良履歷			
1		4	
2		5	
3		6	

核准		審核		製表	

製表日期	版本	修定內容
113.12.03	A/0	新訂

雄業實業股份有限公司

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□ 沖壓

製程作業標準書

頁次： 2/7

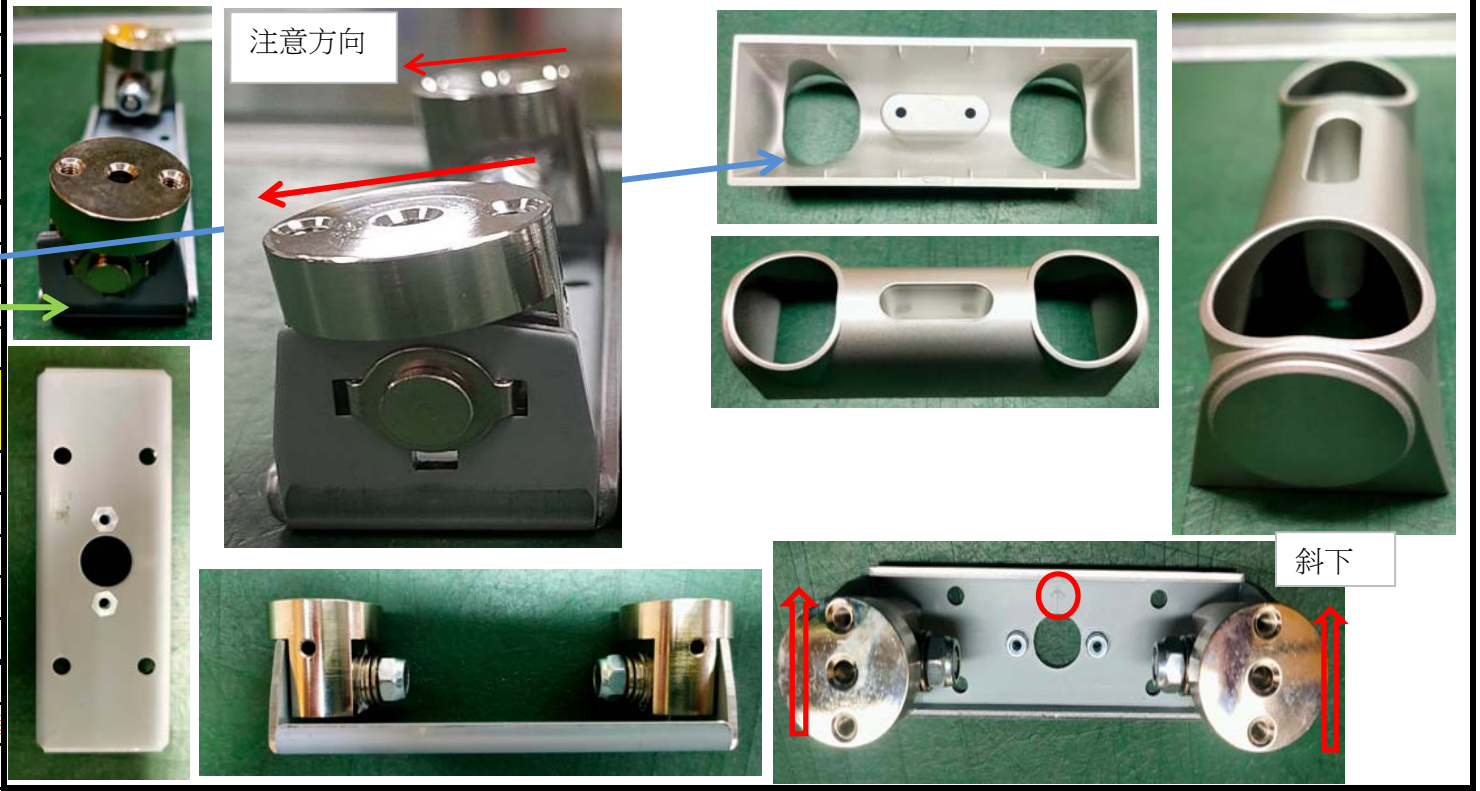
文件編號: PA-SOP-2AAD3320134 A/0

客戶	鈺緯	機種		料號	2AAD3320134 (M2862)		品名	STAND SUB 組立
工段		作業別	外觀檢查	機台編號		噸數	材質	SPCC*5.0

使用工具 / 機台設定		零組件 / 數量	
1		1	
2		2	
3		3	
4		4	

工序內容	
1	鈺緯客供料-3MD332PA050
2	鈺緯客供料-3MD332ME06A
3	
4	客供(如有不良集中拿給生管他會退給客戶)
5	
6	
7	
8	
9	
10	

作業重點	
1	刮傷小於0.15MM不計 大於0.15-0.25MM一邊一個全部2個
2	汙點小於0.35不計 大於0.5mm一邊一個全部2個
3	烤漆異物小於0.5允許一個
4	由於C級面在底部與背部遮蓋處故
5	刮傷部分:無感刮傷＜5公分可
6	有感刮傷<2公分(不露底材)可壓傷<1mm顆粒雜質<0.7



不良履歷			
1		4	
2		5	
3		6	

核准		審核		製表	

製表日期	版本	修定內容
113.12.03	A/0	新訂

雄業實業股份有限公司

■ 組立
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製程作業標準書

文件編號: PA-SOP-2AAD3320134 A/0

客戶	鈺緯	機種		料號	2AAD3320134 (M2862)		品名	STAND SUB 組立
工段		作業別	鎖配件	機台編號		噸數	材質	SPCC*5.0

使用工具 / 機台設定		零組件 / 數量	
1	電動起子	1	
2		2	
3		3	
4		4	

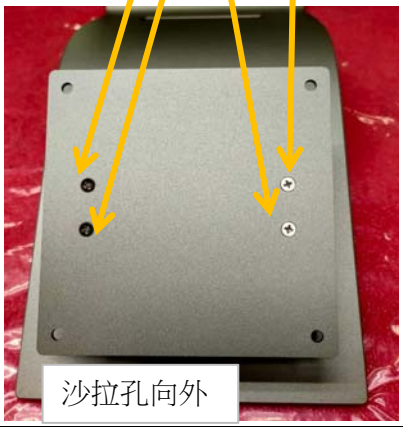
工序內容	
1	平頭螺絲-M4*8L 鍍鎳 *4
2	圓頭螺絲-M3*6L 鍍鎳 *2
3	圓頭螺絲-M4*8L 鍍鎳雙華司 *4
4	鈺緯客供料-3MD332ME06A組裝注意方向
5	注意相關扭力值
6	
7	
8	
9	
10	

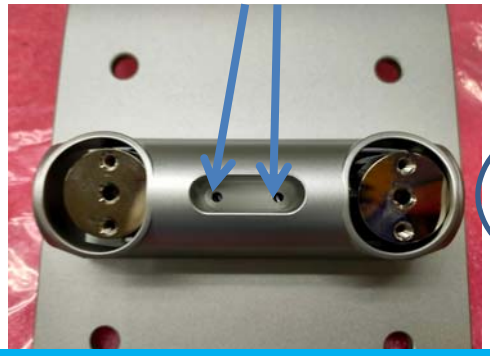
作業重點	
1	不可漏鎖 鎖歪 並確認是否鎖緊
2	**鎖配件作業前檢查電動起子扭力值是否**
3	**有達到相關設定值才可進鎖附**
4	鎖頭不可拿到尖頭
5	鎖好後確認是否會晃動
6	

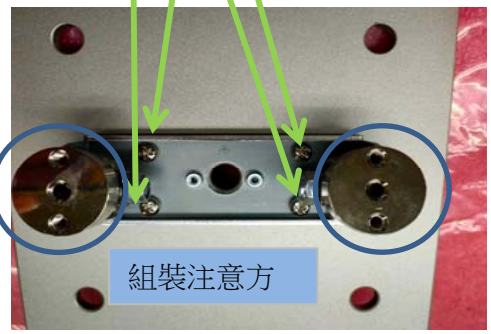












鎖配件作業前檢查電動起子扭力值是否有達到相關設定值才可進行所附

不良履歷			
1		4	
2		5	
3		6	

核准		審核		製表	

製表日期	版本	修定內容
113.12.03	A/0	新訂

雄業實業股份有限公司

■ 組立
□ 沖壓

製程作業標準書

頁次： 4/7

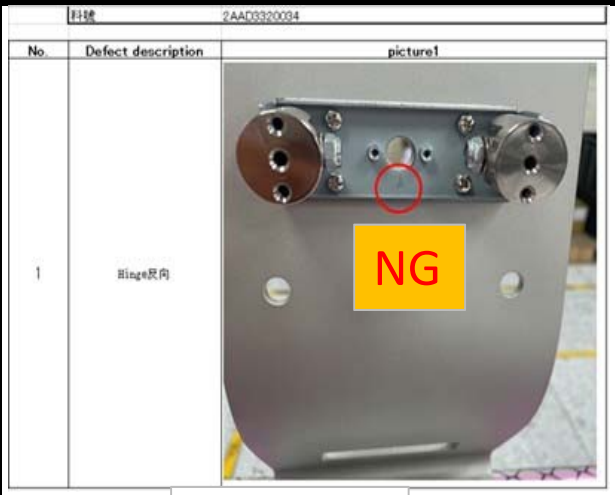
文件編號: PA-SOP-2AAD3320134 A/0

客戶	鈺緯	機種		料號	2AAD3320134 (M2862)	品名	STAND SUB 組立
工段		作業別	外觀檢查	機台編號		噸數		材質	SPCC*5.0

使用工具 / 機台設定		零組件 / 數量	
1		1	
2		2	
3		3	
4		4	

工序內容	
1	檢查外觀 配件是否有鎖緊
2	鈺緯客供料-3MD332ME06A組裝注意方向
3	
4	
5	
6	
7	
8	
9	
10	

作業重點	
1	刮傷小於0.15MM不計 大於0.15-0.25MM一邊一個全部2個
2	汙點小於0.35不計 大於0.5mm一邊一個全部2個
3	烤漆異物小於0.5允許一個
4	由於C級面在底部與背部遮蓋處故
5	刮傷部分:無感刮傷＜5公分可
6	有感刮傷<2公分(不露底材)可壓傷<1mm顆粒雜質<0.7









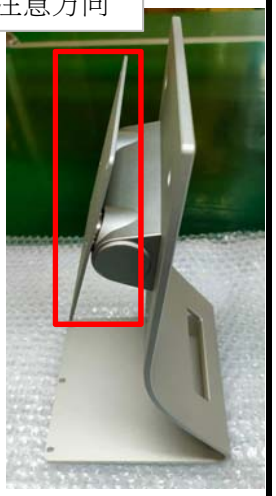


組裝注意方向



3MD332ME060組裝注意方向





不良履歷			
1		4	
2		5	
3		6	

核准		審核		製表	

製表日期	版本	修定內容
113.12.03	A/0	新訂

雄業實業股份有限公司

■ 組立
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製程作業標準書

文件編號: PA-SOP-2AAD3320134 A/0

客戶	鈺緯	機種		料號	2AAD3320134(M2862)	品名	STAND SUB 組立
工段		作業別	包裝組立鎖螺絲包內外層	機台編號		噸數		材質	SPCC*5.0

使用工具 / 機台設定		零組件 / 數量	
1		1	
2		2	
3		3	
4		4	

工序內容	
1	外包:300*500*30mm
2	內包:PE袋:12*22*0.08
3	
4	
5	
6	
7	
8	
9	
10	

作業重點	
1	請小心輕放不可撞傷
2	
3	
4	
5	
6	











不良履歷			
1		4	
2		5	
3		6	

核准		審核		製表	

製表日期	版本	修定內容
113.12.03	A/0	新訂

雄業實業股份有限公司

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製程作業標準書

文件編號: PA-SOP-2AAD3320134 A/0

客戶	鈺緯	機種		料號	2AAD3320134(M2862)		品名	STAND SUB 組立
工段		作業別	包裝	機台編號		噸數	材質	SPCC*5.0

使用工具 / 機台設定		零組件 / 數量	
1		1	430*345*185mm (專用)
2		2	隔板*4
3		3	
4		4	

工序內容	
1	物件中間一定要用隔板分開
2	角一定要用隔板隔開避免撞擊
3	兩側也需要放隔板保護
4	一板只可放5層,棧板不可超過107CM
5	3PCS/箱
6	
7	
8	
9	
10	

作業重點	
1	小心輕放 不可短少
2	
3	
4	
5	
6	



角一定要用隔板隔開避免撞擊
兩側也需要放隔板保護

不良履歷			
1		4	
2		5	
3		6	

核准		審核		製表	

製表日期	版本	修定內容
113.12.03	A/0	新訂

雄業實業股份有限公司

■ 組立
□ 沖壓

製程作業標準書

頁次： 7/7
文件編號: PA-SOP-2AAD3320134 A/0

客戶	鈺緯	機種		料號	2AAD3320134 (M2862)		品名	STAND SUB 組立
工段		作業別	斜角器量測	機台編號		噸數	材質	SPCC*5.0

使用工具 / 機台設定		零組件 / 數量	
1		1	
2		2	
3		3	
4		4	

工序內容	
1	按ZERO歸0
2	吸在料件底部平面處
3	移到斜面量測位
4	直接判定顯示值落在79~80.5度即可
5	(公差範圍 100+1° /-0.5°)
6	
7	
8	
9	
10	

作業重點	
1	
2	
3	
4	
5	
6	



按ZERO歸0



在料件上按ZERO歸



移到斜面看第一次的數字,用

不良履歷			
1		4	
2		5	
3		6	

核准		審核		製表	

製表日期	版本	修定內容
113.12.03	A/0	新訂

雄業實業股份有限公司

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製程作業標準書

文件編號: PA-SOP-2AAD3320134 A/0

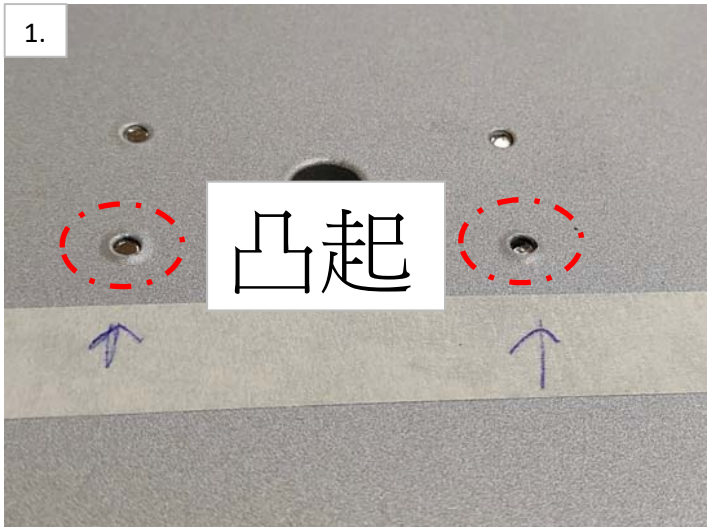
客戶	鈺緯	機種		料號	2AAD3320134 (M2862)			品名	STAND SUB 組立
工段		作業別	斜角器量測	機台編號		噸數		材質	SPCC*5.0

使用工具 / 機台設定		零組件 / 數量	
1		1	
2		2	
3		3	
4		4	

工序內容	
1	1.攻牙處凸起
2	2.漆厚造成孔徑變小
3	
4	
5	
6	
7	
8	
9	
10	

作業重點	
1	
2	
3	
4	
5	
6	

1.



2.



不良履歷			
1		4	
2		5	
3		6	

核准		審核		製表	

製表日期	版本	修定內容
113.12.03	A/0	新訂

測試報告
Test Report

號碼(No.): EKR24701401　　日期(Date): 15-Aug-2024　　頁數(Page) : 1 of 8

中國鋼鐵股份有限公司 (CHINA STEEL CORPORATION)
高雄市小港區中鋼路1號 (1, CHUNG KANG RD., HSIAO KANG, KAOHSIUNG 81233, TAIWAN, REPUBLIC OF CHINA)

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) : 中國鋼鐵股份有限公司 (CHINA STEEL CORPORATION)
樣品名稱(Sample Name) : 熱軋酸洗塗油鋼捲 (HOT ROLLED PICKLED-AND-OILED COIL)

==========

收件日(Sample Receiving Date) : 23-Jul-2024
測試期間(Testing Period) : 23-Jul-2024 to 15-Aug-2024

測試需求(Test Requested) : 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).)

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

結　論(Conclusion) : 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.)

報告簽署人/張伯睿 博士/部經理
Ray Chang, Ph.D./ Department Manager
Signed for and on behalf of
SGS TAIWAN LTD.
化學實驗室-高雄/Chemical Laboratory-Kaohsiung

PIN CODE: 8B456E4A

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測試報告
Test Report

中國鋼鐵股份有限公司 (CHINA STEEL CORPORATION)
高雄市小港區中鋼路1號 (1, CHUNG KANG RD., HSIAO KANG, KAOHSIUNG 81233, TAIWAN, REPUBLIC OF CHINA)

測試部位敘述 (Test Part Description)

No.1 : 銀灰色金屬 (SILVER GRAY METAL)

測試結果 (Test Results)

(Test Items)	測試方法 (Method)	單位 (Unit)	MDL	結果 (Result) No.1	限值 (Limit)
鎘 (Cd) (Cadmium (Cd))	依據IEC 62321-5: 2013，以感應耦合電漿發射光譜儀分析。(According to IEC 62321-5: 2013, analysis was performed by ICP-OES.)	mg/kg	2	n.d.	100
鉛 (Pb) (Lead (Pb))		mg/kg	2	n.d.	1000
汞 (Hg) (Mercury (Hg))	依據IEC 62321-4: 2013+ AMD1: 2017，以感應耦合電漿發射光譜儀分析。(According to IEC 62321-4: 2013+ AMD1: 2017, analysis was performed by ICP-OES.)	mg/kg	2	n.d.	1000
六價鉻 (Hexavalent Chromium) Cr(VI) (#2)	依據IEC 62321-7-1: 2015，以紫外光-可見光分光光度計分析。(According to IEC 62321-7-1: 2015, analysis was performed by UV-VIS.)	μg/cm²	0.1	n.d.	-
一溴聯苯 (Monobromobiphenyl)	自訂方法(文件編號 : TESP-KE-082)參考IEC 62321-6: 2015，以氣相層析儀/質譜儀分析。(In house method (Doc. No. : TESP-KE-082) refer 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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中國鋼鐵股份有限公司 (CHINA STEEL CORPORATION)
高雄市小港區中鋼路1號 (1, CHUNG KANG RD., HSIAO KANG, KAOHSIUNG 81233, TAIWAN, REPUBLIC OF CHINA)

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)	自訂方法(文件編號 : TESP-KE-082)參考IEC 62321-6: 2015，以氣相層析儀/質譜儀分析。(In house method (Doc. No. : TESP-KE-082) refer 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))	依據IEC 62321-8: 2017，以氣相層析儀/質譜儀分析。(According 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))		mg/kg	50	n.d.	1000
鄰苯二甲酸二異丁酯 (DIBP) (Diisobutyl phthalate (DIBP))		mg/kg	50	n.d.	1000
鄰苯二甲酸二(2-乙基己基)酯 (DEHP) (Di-(2-ethylhexyl) phthalate (DEHP))		mg/kg	50	n.d.	1000

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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. (#2) =
   a. 當六價鉻結果大於0.13 μg/cm²，表示樣品表層含有六價鉻。(The sample is positive for Cr(VI) if the Cr(VI) concentration is greater than 0.13 μg/cm². The sample coating is considered to contain Cr(VI).)
   b. 當六價鉻結果為n.d. (濃度小於0.10 μg/cm²)，表示表層不含六價鉻。(The sample is negative for Cr(VI) if Cr(VI) is n.d. (concentration less than 0.10 μg/cm²). The coating is considered a non-Cr(VI) based coating)
   c. 當六價鉻結果介於 0.10 及 0.13 μg/cm² 時，無法確定塗層是否含有六價鉻。(The result between 0.10 μg/cm² and 0.13 μg/cm² is considered to be inconclusive - unavoidable coating variations may influence the determination.)
6. 除非另有說明，參照ILAC-G8:09/2019決定規則，採用簡單允收規則之二分法(w=0)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.)
7. 申請人提交的產品是用於電機電子設備之原物料。(The product from the applicant submitted is a raw material which is used for electric and electronic equipment.)

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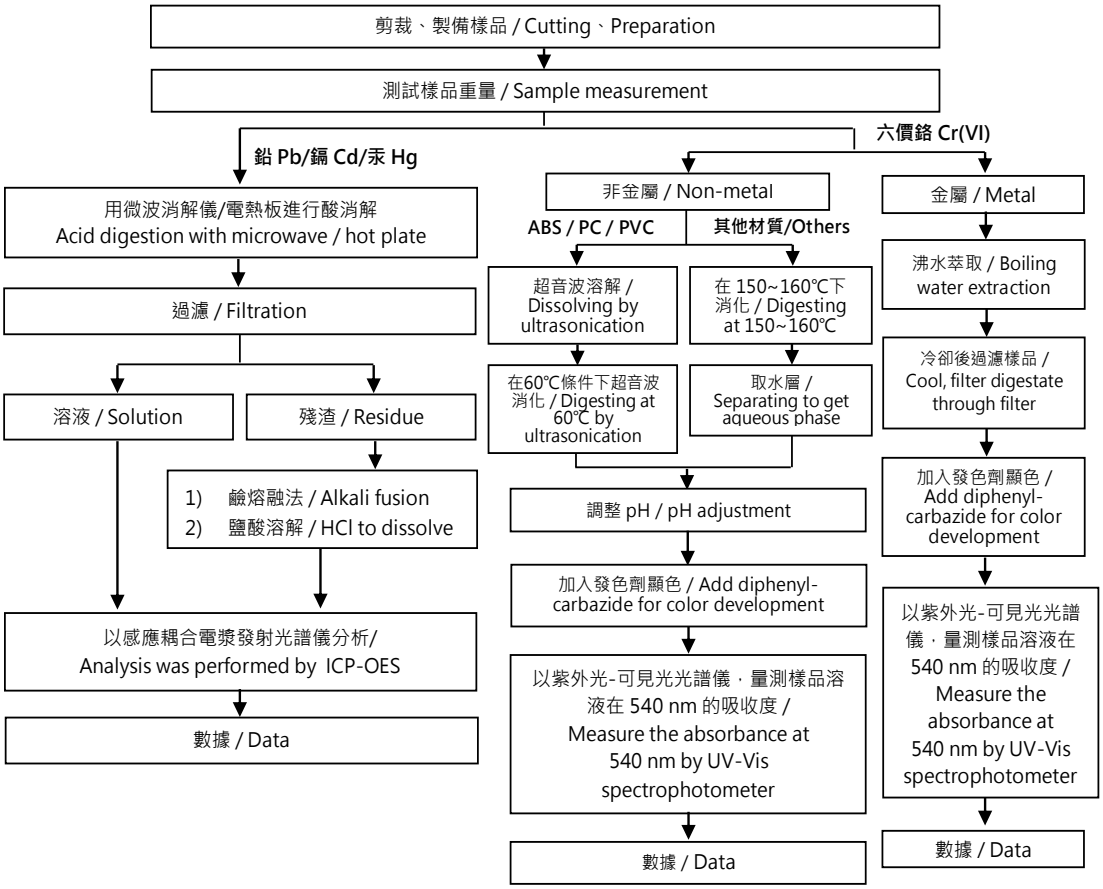
高雄市小港區中鋼路1號 (1, CHUNG KANG RD., HSIAO KANG, KAOHSIUNG 81233, TAIWAN, REPUBLIC OF CHINA)

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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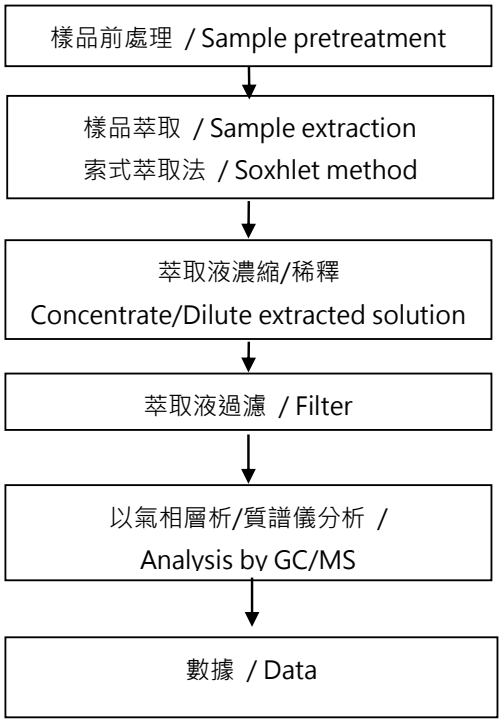
中國鋼鐵股份有限公司 (CHINA STEEL CORPORATION)
高雄市小港區中鋼路1號 (1, CHUNG KANG RD., HSIAO KANG, KAOHSIUNG 81233, TAIWAN, REPUBLIC OF CHINA)

多溴聯苯/多溴聯苯醚 分析流程圖 / PBB/PBDE analytical FLOW CHART



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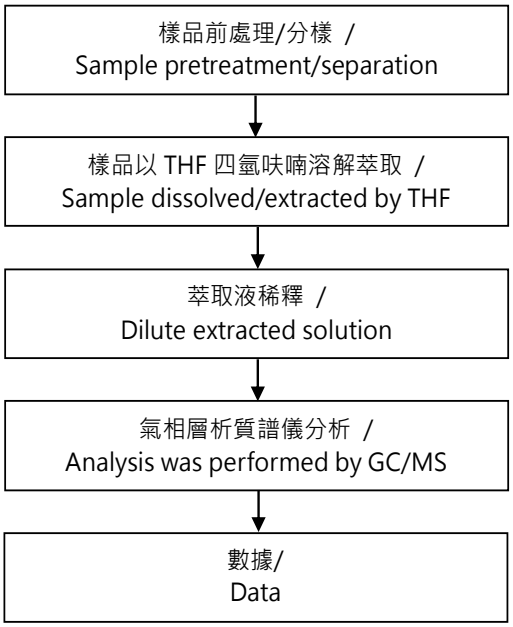
可塑劑分析流程圖 / Analytical flow chart - Phthalate

【測試方法/Test method: IEC 62321-8】



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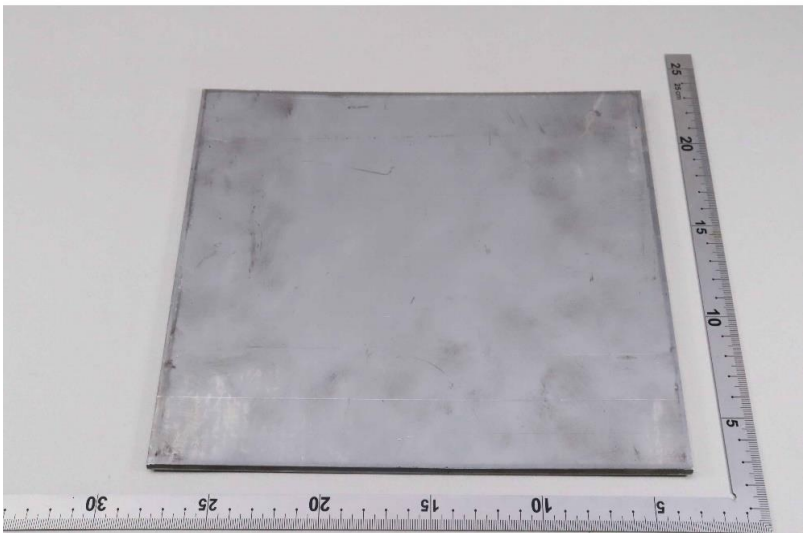
測試報告
Test Report

中國鋼鐵股份有限公司 (CHINA STEEL CORPORATION)
高雄市小港區中鋼路1號 (1, CHUNG KANG RD., HSIAO KANG, KAOHSIUNG 81233, TAIWAN, REPUBLIC OF CHINA)

*** 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.)

EKR24701401



** 報告結尾 (End of Report) **

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CHINA STEEL 中鋼公司

安全資料表(SDS)

一、物品與廠商資料

物品名稱：線材、棒鋼、鋼板、熱軋鋼捲片、熱軋 P/O(Wire Rods，Steel Bars，Steel Plates，Hot-Rolled Steel Coils & Sheets & Plates、Hot-Rolled P/O)	
物品編號：	
製造商或供應商名稱、地址及電話：中國鋼鐵股份有限公司 812 高雄市小港區中鋼路 1 號	
緊急聯絡電話：(07)802-1111	傳真電話：(07)8039553

二、危害辨識資料

重要物理性及化學性危害與效應	1.與強酸接觸會起反應產生可燃性氫氣。 2.銲接或加熱會產生氧化鐵燻煙。

三、成分辨識資料

純物質：

物品中（英）文名稱：鋼(STEEL)		
同義名稱：		
化學文摘社登記號碼(CAS.NO.)：鐵：07439-89-6		
危害物質成分(成分百分比)：鐵>96%		
危害物質成分之中（英）文名稱	濃度或濃度範圍(成分百分比)	危害物質分類及圖式
鐵(Fe)	>96%	

四、急救措施

不同暴露途徑之急救方法：

- 吸入：本產品形態食入之可能性相當低。
- 眼睛接觸：立即將眼皮撐開，用大量水沖洗 15 分鐘。本產品形態進入眼睛之可能性相當低。
- 皮膚接觸：立即用肥皂和水清洗，本產品形態造成刺激皮膚之可能性相當低。

五、滅火措施

適用滅火劑：使用適合週遭火災之滅火器。
滅火時可能遭遇之特殊危害：1.此物若以大塊型式存在時，不可燃。 2.若以微細粉末存在時，遇火源有引起爆炸的危險。 3.本產品若熔化或燃燒，則會產生毒性或刺激性蒸汽，請使用個人呼吸防護器具。

六、洩漏處理方法

本產品為固體狀不適用。

七、安全處置與儲存方法

一般使用：本產品邊緣為尖銳薄片或捲片，進行各項作業必須使用個人防護器具，所有員工必須接受訓練以安全地進行各項作業。
儲存建議：建議儲存於可防止實體破壞、濕氣、直接日曬之場所。

八、暴露預防措施

重要成分	化學文摘社登記號碼 CAS NO.	重量比例 (%)	暴露限制	
			OSHA PEL	ACGIH TLV
鐵 Iron	7439-89-6	96	未建立	未建立

工程控制：

1. 在進行燃燒、銅鑄、切割、研磨、打光、銲接或其他機械加工時，應使用機械通風裝置。
2. 若在進行機械加工時，有產生粉塵或微粒狀物質，建議採用局部及一般通風裝置以預防過多的危害物質暴露。

個人防護設備：

眼睛防護：在進行本產品作業時請穿戴化學安全護目鏡。

呼吸防護：如需符合暴露標準 在進行切割、研磨、打光或銲接等機械加工作業時，應使用自攜式呼吸防護具。 皮膚防護：1.使用皮革或防割傷手套以免被尖銳薄片或捲片割傷。 2.使用防滲透手套以免被皮膚接觸表面油污。 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： 1.工作場所嚴禁飲用、抽煙或飲食。 2.處理此物後，須徹底洗手。

九、物理及化學性質

物質狀態：固體	形狀：薄片或捲片
顏色：金屬性灰色	氣味：無味
pH 值：不適用	閃火點：不適用
熔解溫度：1535℃	
自燃溫度：不適用	爆炸界限：不適用
密度：7.5 – 8.0（水＝1）	溶解度：不溶於水
熔點/凝固點：不適用	揮發速率：不適用
易燃性(固態、氣態）：不適用	分配係數(正辛醇/水）：不適用

十、安定性及反應性

安定性：正常狀況下安定
應避免之狀況：濕氣及腐蝕性物質會氧化本物質
應避免之物質：酸類、A 類及 B 類爆炸物、強性氧化物、腐蝕劑
危害分解物：引燃或熔解可能會產生有產生毒性或刺激性蒸汽

十一、毒性資料

急毒性(Acute Effects)：

鐵(Iron) LD50(測試動物暴露途徑)：30 g/kg(大鼠，吞食)

過度暴露效應(Symptoms of Overexposure)：

鐵**(Iron Oxide)**：過度暴露或重覆暴露於高濃度狀況下，可能造成塵肺病 pneumoconiosis，吸入氧化鐵可能會刺激眼睛、鼻子及喉嚨。

矽**(Silicon)**: 主要為厭惡性粉塵(Nuisance Dust)，可能會刺激眼睛及黏液薄膜(Mucous Membranes)，本產品型態無此危害。

十二、生態資料

現有資料無影響生態之考量

十三、廢棄處置方法

廢棄處置方法：1.參考相關法規處理。
2.相關法規可能會限制金屬性廢棄物之處置。
3.建議採取回收金屬性廢棄物。

十四、運送資料

無特殊運送方法

十五、法規資料

適用法規：
職業安全衛生設施規則

危害性化學品標識及通識規則 勞工作業環境空氣中有害物容許濃度標準 事業廢棄物貯存清除處理方法及設施標準

十六、其他資料

參考文獻		
製表者單位	名稱：中國鋼鐵股份有限公司	
	地址/電話：812 高雄市小港區中鋼路 1 號，Tel：(07)8021111	
製 表 人	職稱：工 程 師	姓名（簽章）：曾文宏
製表日期	2024.01.05	
備　　註	1. 本安全資料表僅供參考，中國鋼鐵股份有限公司對使用本資料不承擔任何法律責任或提供任何保證。 2. 本安全資料表之提供是基於對本產品的安全及健康危害相關資訊之最佳瞭解，以安全地進行本產品之各項作業及處理。 3. 每位進行本產品之各項作業及處理之人員應先閱讀本安全資料表，瞭解如何進行本產品之各項作業及處理；也應考量本產品與其他製造廠商產品可能之應用。	

測試報告
Test Report

號碼(No.): EKR23701405　　日期(Date): 15-Aug-2023　　頁數(Page) : 1 of 8

中國鋼鐵股份有限公司 (CHINA STEEL CORPORATION)
高雄市小港區中鋼路1號 (1 CHUNG KANG ROAD, HSIAO KANG, KAOHSIUNG 812401, TAIWAN, REPUBLIC OF CHINA)

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) : 中國鋼鐵股份有限公司 (CHINA STEEL CORPORATION)
樣品名稱(Sample Name) : 條線產品 (BAR AND ROD PRODUCT)

==========

收件日(Sample Receiving Date) : 20-Jul-2023
測試期間(Testing Period) : 20-Jul-2023 to 15-Aug-2023

測試需求(Test Requested) : 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).)

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

結　論(Conclusion) : 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.)

報告簽署人/張伯睿 博士/部經理
Ray Chang, Ph.D./ Department Manager
Signed for and on behalf of SGS TAIWAN LTD.
化學實驗室-高雄/Chemical Laboratory-Kaohsiung

PIN CODE: 8B9B274B

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高雄市小港區中鋼路1號 (1 CHUNG KANG ROAD, HSIAO KANG, KAOHSIUNG 812401, TAIWAN, REPUBLIC OF CHINA)

測試部位敘述 (Test Part Description)

No.1 : 銀灰色金屬 (SILVER GRAY METAL)

測試結果 (Test Results)

測試項目 (Test Items)	測試方法 (Method)	單位 (Unit)	MDL	結果 (Result)	限值 (Limit)
				No.1	
鎘 (Cd) (Cadmium (Cd))	依據IEC 62321-5: 2013，以感應耦合電漿發射光譜儀分析。(According to IEC 62321-5: 2013, analysis was performed by ICP-OES.)	mg/kg	2	n.d.	100
鉛 (Pb) (Lead (Pb))		mg/kg	2	n.d.	1000
汞 (Hg) (Mercury (Hg))	依據IEC 62321-4: 2013+ AMD1: 2017，以感應耦合電漿發射光譜儀分析。(According to IEC 62321-4: 2013+ AMD1: 2017, analysis was performed by ICP-OES.)	mg/kg	2	n.d.	1000
六價鉻 (Hexavalent Chromium) Cr(VI) (#2)	依據IEC 62321-7-1: 2015，以紫外光-可見光分光光度計分析。(According to IEC 62321-7-1: 2015, analysis was performed by UV-VIS.)	μg/cm²	0.1	n.d.	-
一溴聯苯 (Monobromobiphenyl)	參考IEC 62321-6: 2015自訂方法，以氣相層析儀/質譜儀分析。(With reference to IEC 62321-6: 2015 in house method, 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自訂方法，以氣相層析儀/質譜儀分析。(With reference to IEC 62321-6: 2015 in house method, 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
鄰苯二甲酸二丁酯 (DBP) (Dibutyl phthalate (DBP))	依據IEC 62321-8: 2017，以氣相層析儀/質譜儀分析。(According to IEC 62321-8: 2017, analysis was performed by GC/MS.)	mg/kg	50	n.d.	1000
鄰苯二甲酸丁苯甲酯 (BBP) (Butyl benzyl phthalate (BBP))		mg/kg	50	n.d.	1000
鄰苯二甲酸二異丁酯 (DIBP) (Diisobutyl phthalate (DIBP))		mg/kg	50	n.d.	1000
鄰苯二甲酸二(2-乙基己基)酯 (DEHP) (Di-(2-ethylhexyl) phthalate (DEHP))		mg/kg	50	n.d.	1000

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測試報告
Test Report

中國鋼鐵股份有限公司 (CHINA STEEL CORPORATION)
高雄市小港區中鋼路1號 (1 CHUNG KANG ROAD, HSIAO KANG, KAOHSIUNG 812401, TAIWAN, REPUBLIC OF CHINA)

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. (#2) =
   a. 當六價鉻結果大於0.13 μg/cm²，表示樣品表層含有六價鉻。(The sample is positive for Cr(VI) if the Cr(VI) concentration is greater than 0.13 μg/cm². The sample coating is considered to contain Cr(VI).)
   b. 當六價鉻結果為n.d. (濃度小於0.10 μg/cm²)，表示表層不含六價鉻。(The sample is negative for Cr(VI) if Cr(VI) is n.d. (concentration less than 0.10 μg/cm²). The coating is considered a non-Cr(VI) based coating)
   c. 當六價鉻結果介於 0.10 及 0.13 μg/cm² 時，無法確定塗層是否含有六價鉻。(The result between 0.10 μg/cm² and 0.13 μg/cm² is considered to be inconclusive - unavoidable coating variations may influence the determination.)
6. 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.)
7. 申請人提交的產品是用於電機電子設備之原物料。(The product from the applicant submitted is a raw material which is used for electric and electronic equipment.)

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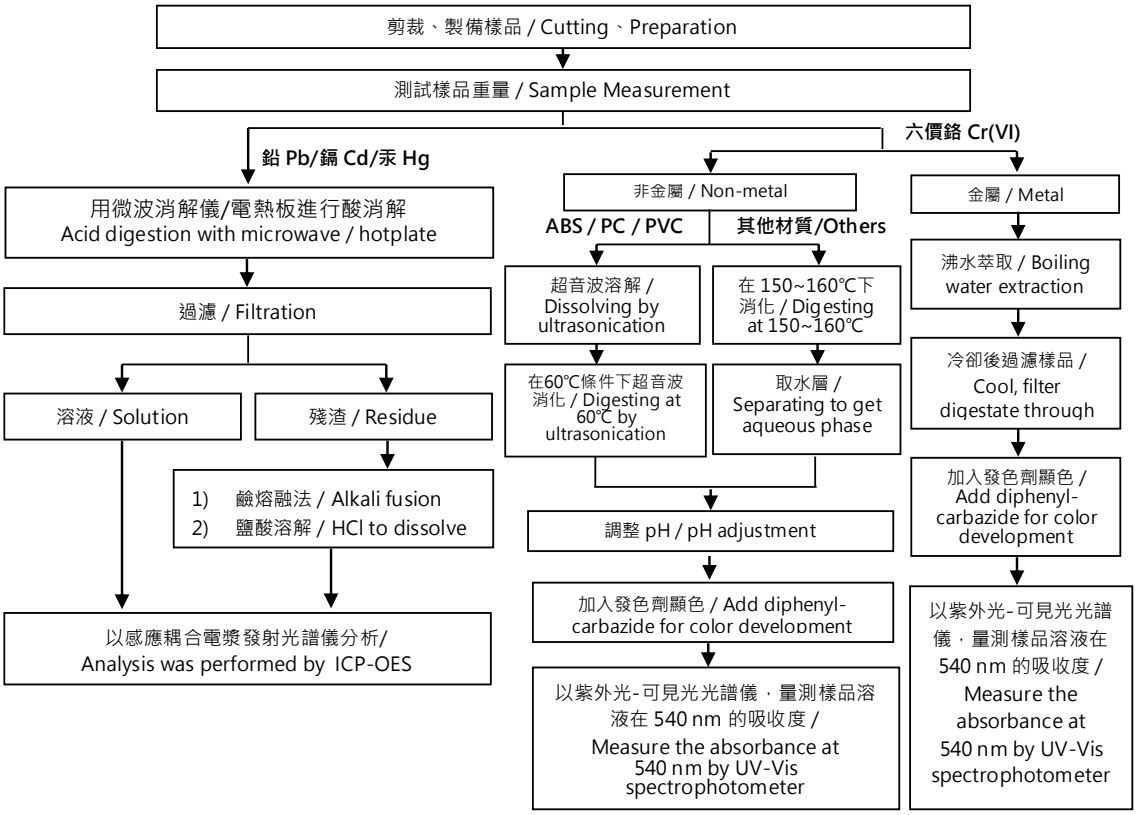
中國鋼鐵股份有限公司 (CHINA STEEL CORPORATION)
高雄市小港區中鋼路1號 (1 CHUNG KANG ROAD, HSIAO KANG, KAOHSIUNG 812401, TAIWAN, REPUBLIC OF CHINA)

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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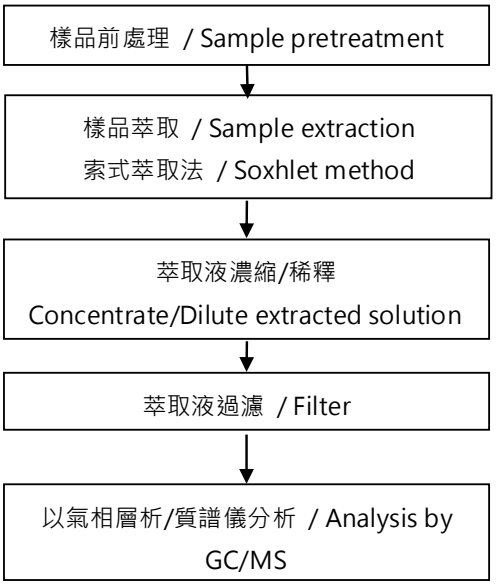
中國鋼鐵股份有限公司 (CHINA STEEL CORPORATION)
高雄市小港區中鋼路1號 (1 CHUNG KANG ROAD, HSIAO KANG, KAOHSIUNG 812401, TAIWAN, REPUBLIC OF CHINA)

多溴聯苯/多溴聯苯醚 分析流程圖 / PBB/PBDE analytical FLOW CHART



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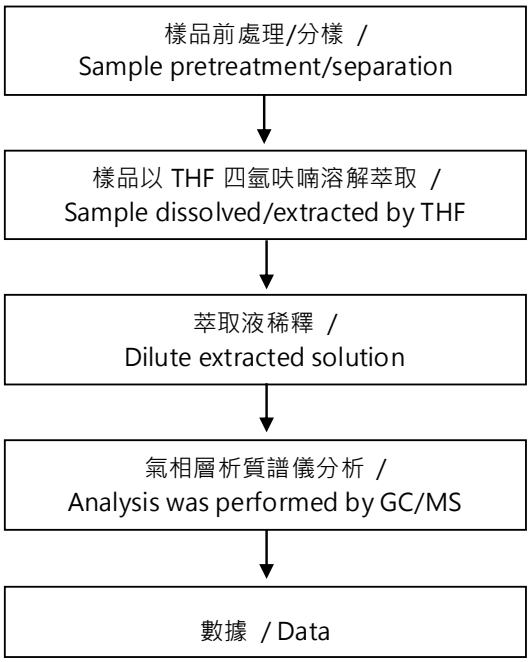
中國鋼鐵股份有限公司 (CHINA STEEL CORPORATION)
高雄市小港區中鋼路1號 (1 CHUNG KANG ROAD, HSIAO KANG, KAOHSIUNG 812401, TAIWAN, REPUBLIC OF CHINA)

可塑劑分析流程圖 / Analytical flow chart of phthalate content

【測試方法/Test method: IEC 62321-8】



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測試報告
Test Report

號碼(No.): EKR23701405　　日期(Date): 15-Aug-2023　　

中國鋼鐵股份有限公司 (CHINA STEEL CORPORATION)
高雄市小港區中鋼路1號 (1 CHUNG KANG ROAD, HSIAO KANG, KAOHSIUNG 812401, TAIWAN, REPUBLIC OF CHINA)

*** 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.)

EKR23701405



** 報告結尾 (End of Report) **

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安全資料表(SDS)

一、物品與廠商資料

物品名稱：線材、棒鋼、鋼板、熱軋鋼捲片、熱軋 P/O(Wire Rods，Steel Bars，Steel Plates，Hot-Rolled Steel Coils & Sheets & Plates、Hot-Rolled P/O)	
物品編號：	
製造商或供應商名稱、地址及電話：中國鋼鐵股份有限公司 812 高雄市小港區中鋼路 1 號	
緊急聯絡電話：(07)802-1111	傳真電話：(07)8039553

二、危害辨識資料

重要物理性及 化學性危害與效應	1.與強酸接觸會起反應產生可燃性氫氣。 2.銲接或加熱會產生氧化鐵燻煙。

三、成分辨識資料

純物質：

物品中（英）文名稱：鋼(STEEL)		
同義名稱：		
化學文摘社登記號碼(CAS.NO.)：鐵：07439-89-6		
危害物質成分(成分百分比)：鐵>96%		
危害物質成分之中（英）文名稱	濃度或濃度範圍(成分百分比)	危害物質分類及圖式
鐵(Fe)	>96%	

四、急救措施

不同暴露途徑之急救方法：

- 吸入：本產品形態食入之可能性相當低。
- 眼睛接觸：立即將眼皮撐開，用大量水沖洗 15 分鐘。本產品形態進入眼睛之可能性相當低。
- 皮膚接觸：立即用肥皂和水清洗，本產品形態造成刺激皮膚之可能性相當低。

五、滅火措施

適用滅火劑：使用適合週遭火災之滅火器。

滅火時可能遭遇之特殊危害：1.此物若以大塊型式存在時，不可燃。
2.若以微細粉末存在時，遇火源有引起爆炸的危險。
3.本產品若熔化或燃燒，則會產生毒性或刺激性蒸汽，請使用個人呼吸防護器具。

六、洩漏處理方法

本產品為固體狀不適用。

七、安全處置與儲存方法

一般使用：本產品邊緣為尖銳薄片或捲片，進行各項作業必須使用個人防護器具，所有員工必須接受訓練以安全地進行各項作業。

儲存建議：建議儲存於可防止實體破壞、濕氣、直接日曬之場所。

八、暴露預防措施

重要成分	化學文摘社登記號碼 CAS NO.	重量比例 (%)	暴露限制	
			OSHA PEL	ACGIH TLV
鐵 Iron	7439-89-6	96	未建立	未建立

工程控制：

1. 在進行燃燒、銅鑄、切割、研磨、打光、銲接或其他機械加工時，應使用機械通風裝置。
2. 若在進行機械加工時，有產生粉塵或微粒狀物質，建議採用局部及一般通風裝置以預防過多的危害物質暴露。

個人防護設備：

眼睛防護：在進行本產品作業時請穿戴化學安全護目鏡。

呼吸防護：如需符合暴露標準 在進行切割、研磨、打光或銲接等機械加工作業時，應使用自攜式呼

吸防護具。 皮膚防護：1.使用皮革或防割傷手套以免被尖銳薄片或捲片割傷。 2.使用防滲透手套以免被皮膚接觸表面油污。 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： 1.工作場所嚴禁飲用、抽煙或飲食。 2.處理此物後，須徹底洗手。

九、物理及化學性質

物質狀態：固體	形狀：薄片或捲片
顏色：金屬性灰色	氣味：無味
pH 值：不適用	閃火點：不適用
熔解溫度：1535℃	
自燃溫度：不適用	爆炸界限：不適用
密度：7.5－8.0（水＝1）	溶解度：不溶於水
熔點/凝固點：不適用	揮發速率：不適用
易燃性(固態、氣態）：不適用	分配係數(正辛醇/水）：不適用

十、安定性及反應性

安定性：正常狀況下安定
應避免之狀況：濕氣及腐蝕性物質會氧化本物質
應避免之物質：酸類、A 類及 B 類爆炸物、強性氧化物、腐蝕劑
危害分解物：引燃或熔解可能會產生有產生毒性或刺激性蒸汽

十一、毒性資料

急毒性(Acute Effects)：

鐵(Iron) LD50(測試動物暴露途徑)：30 g/kg(大鼠，吞食)

過度暴露效應(Symptoms of Overexposure)：

鐵(Iron Oxide)：過度暴露或重覆暴露於高濃度狀況下，可能造成塵肺病 pneumoconiosis，吸入氧化鐵可能會刺激眼睛、鼻子及喉嚨。

矽(Silicon): 主要為厭惡性粉塵(Nuisance Dust)，可能會刺激眼睛及黏液薄膜(Mucous Membranes)，本產品型態無此危害。

十二、生態資料

現有資料無影響生態之考量

十三、廢棄處置方法

廢棄處置方法：1.參考相關法規處理。
2.相關法規可能會限制金屬性廢棄物之處置。
3.建議採取回收金屬性廢棄物。

十四、運送資料

無特殊運送方法

十五、法規資料

適用法規：
職業安全衛生設施規則
危害性化學品標識及通識規則
勞工作業環境空氣中有害物容許濃度標準
事業廢棄物貯存清除處理方法及設施標準

安全資料表(SDS)

十六、其他資料

參考文獻		
製表者單位	名稱：中國鋼鐵股份有限公司	
	地址/電話：812 高雄市小港區中鋼路 1 號，Tel：(07)8021111	
製 表 人	職稱：工 程 師	姓名（簽章）：趙彥儒
製表日期	2020.01.13	
備　　註	1. 本安全資料表僅供參考，中國鋼鐵股份有限公司對使用本資料不承擔任何法律責任或提供任何保證。 2. 本安全資料表之提供是基於對本產品的安全及健康危害相關資訊之最佳瞭解，以安全地進行本產品之各項作業及處理。 3. 每位進行本產品之各項作業及處理之人員應先閱讀本安全資料表，瞭解如何進行本產品之各項作業及處理；也應考量本產品與其他製造廠商產品可能之應用。	

簽名有效
For Question, Please
Contact with SGS
www.sgs.com.tw

測試報告
Test Report

號碼(No.): ETR24304884　　日期(Date): 02-Apr-2024　　

聖龍金屬表面處理有限公司 (GREAT DRAGON METAL ELECTROPLATING CO., LTD.)
新北市五股區民義路一段240號 (NO. 240, SEC. 1, MINYI RD., WUGU DISTRICT, NEW TAIPEI CITY, 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) : 聖龍金屬表面處理有限公司 (GREAT DRAGON METAL ELECTROPLATING CO., LTD.)
樣品名稱(Sample Name) : 鐵片-鍍鎳鉻鍍層

==========

收件日(Sample Receiving Date) : 25-Mar-2024
測試期間(Testing Period) : 25-Mar-2024 to 01-Apr-2024

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) 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.)

結　論(Conclusion) :
(1) 根據客戶所選擇的部位測試，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 selected part of 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: A5F0DBAE

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測試報告
Test Report

聖龍金屬表面處理有限公司 (GREAT DRAGON METAL ELECTROPLATING CO., LTD.)
新北市五股區民義路一段240號 (NO. 240, SEC. 1, MINYI RD., WUGU DISTRICT, NEW TAIPEI CITY, TAIWAN)

測試部位敘述 (Test Part Description)

No.1 : 銀色金屬片鍍層 (PLATING LAYER OF SILVER COLORED METAL SHEET)
No.2 : 銀色金屬片 (含鍍層) (SILVER COLORED METAL SHEET (INCLUDING THE PLATING LAYER))

測試結果 (Test Results)

測試項目 (Test Items)	測試方法 (Method)	單位 (Unit)	MDL	結果 (Result)		限值 (Limit)
				No.1	No.2	
鎘 (Cd) (Cadmium (Cd))	酸洗脫鍍層，參考IEC 62321-5: 2013，以感應耦合電漿發射光譜儀分析。(IEC 62321-5: 2013 application of modified digestion by surface etching, analysis was performed by ICP-OES.)	mg/kg	2	n.d.	---	100
鉛 (Pb) (Lead (Pb))		mg/kg	2	n.d.	---	1000
汞 (Hg) (Mercury (Hg))	酸洗脫鍍層，參考IEC 62321-4: 2013+ AMD1: 2017，以感應耦合電漿發射光譜儀分析。(IEC 62321-4: 2013+AMD1: 2017 application of modified digestion by surface etching, analysis was performed by ICP-OES.)	mg/kg	2	n.d.	---	1000
六價鉻 (Hexavalent Chromium) Cr(VI) (#2)	參考IEC 62321-7-1: 2015，以紫外光-可見光分光光度計分析。(With reference to IEC 62321-7-1: 2015, analysis was performed by UV-VIS.)	μg/cm²	0.1	n.d.	---	-
全氟辛烷磺酸及其鹽類 (PFOS and its salts) (CAS No.: 1763-23-1 and its salts)	參考US EPA 3550C: 2007，以液相層析串聯質譜儀分析。(With reference to US EPA 3550C: 2007, analysis was performed by LC/MS/MS.)	μg/m²	0.5	n.d.	---	-
全氟辛酸及其鹽類 (PFOA and its salts) (CAS No.: 335-67-1 and its salts)		μg/m²	0.5	n.d.	---	-

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聖龍金屬表面處理有限公司 (GREAT DRAGON METAL ELECTROPLATING CO., LTD.)
新北市五股區民義路一段240號 (NO. 240, SEC. 1, MINYI RD., WUGU DISTRICT, NEW TAIPEI CITY, TAIWAN)

測試項目 (Test Items)	測試方法 (Method)	單位 (Unit)	MDL	結果 (Result)		限值 (Limit)
				No.1	No.2	
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
一溴聯苯醚 (Monobromodiphenyl ether)		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))	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))		mg/kg	50	---	n.d.	1000
鄰苯二甲酸二(2-乙基己基)酯 (DEHP) (Di-(2-ethylhexyl) phthalate (DEHP))		mg/kg	50	---	n.d.	1000
鄰苯二甲酸二異丁酯 (DIBP) (Diisobutyl phthalate (DIBP))		mg/kg	50	---	n.d.	1000

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測試報告
Test Report

聖龍金屬表面處理有限公司 (GREAT DRAGON METAL ELECTROPLATING CO., LTD.)
新北市五股區民義路一段240號 (NO. 240, SEC. 1, MINYI RD., WUGU DISTRICT, NEW TAIPEI CITY, TAIWAN)

測試項目 (Test Items)	測試方法 (Method)	單位 (Unit)	MDL	結果 (Result)		限值 (Limit)
				No.1	No.2	
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)		mg/kg	50	---	n.d.	-
溴 (Br) (Bromine (Br)) (CAS No.: 10097-32-2)		mg/kg	50	---	n.d.	-
碘 (I) (Iodine (I)) (CAS No.: 14362-44-8)		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
4. "-" = Not Regulated (無規格值)
5. "---" = Not Conducted (未測試項目)
6. (#2) =
   a. 當六價鉻結果大於0.13 μg/cm²，表示樣品表層含有六價鉻。(The sample is positive for Cr(VI) if the Cr(VI) concentration is greater than 0.13 μg/cm². The sample coating is considered to contain Cr(VI).)
   b. 當六價鉻結果為n.d. (濃度小於0.10 μg/cm²)，表示表層不含六價鉻。(The sample is negative for Cr(VI) if Cr(VI) is n.d. (concentration less than 0.10 μg/cm²). The coating is considered a non-Cr(VI) based coating)
   c. 當六價鉻結果介於 0.10 及 0.13 μg/cm² 時，無法確定塗層是否含有六價鉻。(The result between 0.10 μg/cm² and 0.13 μg/cm² is considered to be inconclusive - unavoidable coating variations may influence the determination.)
7. 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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PFAS Remark：

現有PFAS定量技術是分析PFAS物質的特定結構，但同碳數族群之PFAS酸及鹽類物質，其可被辨識的特定結構相同，因此無法區別所分析的特定結構是來自酸或者鹽類，故測試結果為同碳數族群之PFAS之酸及鹽類物質的濃度總合。下表PFAS物質濃度皆已包含在測試結果中，相關資訊請參見下表：(下表列舉PFAS物質僅為範例，並不包含所有同碳數族群之PFAS鹽類。)
(The quantitative technology of PFAS is to analyze the specific structure of PFAS substances. However, PFAS acid and its salts with the same carbon number group have the same specific structure that can be identified. The tested results of the analyzed specific structure cannot be distinguished to identify the contribution from PFAS acid or its salts. Therefore, the tested results display the sum of concentrations of PFAS acids and its salts with the same carbon number group. The concentration of PFAS substances in the below table have been included in the tested results, please refer to the table for relevant information: (The listed PFAS substances are examples only, it do not include all PFAS salts with the same carbon number group.))

群組名稱 (Group Name)	物質名稱 (Substance Name)	CAS No.
PFOS, 及其鹽&衍生物 (PFOS, its salts & derivatives)	全氟辛烷磺酸 (Perfluorooctane sulfonates) (PFOS)	1763-23-1
	全氟辛基磺酸鉀 (PFOS-K) Potassium perfluorooctanesulfonate (PFOS-K)	2795-39-3
	全氟辛基磺酸鋰 (PFOS-Li) Perfluorooctanesulfonic acid, lithium salt (PFOS-Li)	29457-72-5
	全氟辛基磺酸銨 (PFOS-NH_4) Perfluorooctanesulfonic acid, ammonium salt (PFOS-NH_4)	29081-56-9
	全氟辛基磺酸二乙醇銨 (PFOS-$NH(OH)_2$) Perfluorooctane sulfonate diethanolamine salt (PFOS-$NH(OH)_2$)	70225-14-8
	全氟辛基磺酸四乙基銨 (PFOS-$N(C_2H_5)_4$) Perfluorooctanesulfonic acid,tetraethylammonium salt (PFOS-$N(C_2H_5)_4$)	56773-42-3
	全氟辛基磺酸二癸二甲基銨 (PFOS-DDA) N-decyl-N,N-dimethyldecan-1-aminium 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluorooctane-1-sulfonate (PFOS-DDA)	251099-16-8
	全氟辛基磺醯氟 (POSF) Perfluorooctane sulfonyl fluoride (POSF)	307-35-7
	全氟辛基磺酸鎂 (PFOS-Mg) Perfluorooctanesulfonic acid, magnesium salt (PFOS-Mg)	91036-71-4
	全氟辛基磺酸鈉 (PFOS-Na) Perfluorooctanesulfonic acid, sodium salt (PFOS-Na)	4021-47-0
	全氟辛烷磺酸哌啶 Piperidine 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluorooctanesulfonate	71463-74-6

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群組名稱 (Group Name)	物質名稱 (Substance Name)	CAS No.
PFOA, 及其鹽&衍生物 (PFOA, its salts & derivatives)	全氟辛酸 (Perfluorooctanoic acid) (PFOA)	335-67-1
	全氟辛酸鈉 (PFOA-Na) Sodium perfluorooctanoate (PFOA-Na)	335-95-5
	全氟辛酸鉀 (PFOA-K) Potassium perfluorooctanoate (PFOA-K)	2395-00-8
	全氟辛酸銀 (PFOA-Ag) Silver perfluorooctanote (PFOA-Ag)	335-93-3
	全氟辛氟 (PFOA-F) Perfluorooctanoyl fluoride (PFOA-F)	335-66-0
	全氟辛酸銨 (APFO) Ammonium pentadecafluorooctanoate (APFO)	3825-26-1
	全氟辛酸鋰 (PFOA-Li) Lithium perfluorooctanoate (PFOA-Li)	17125-58-5

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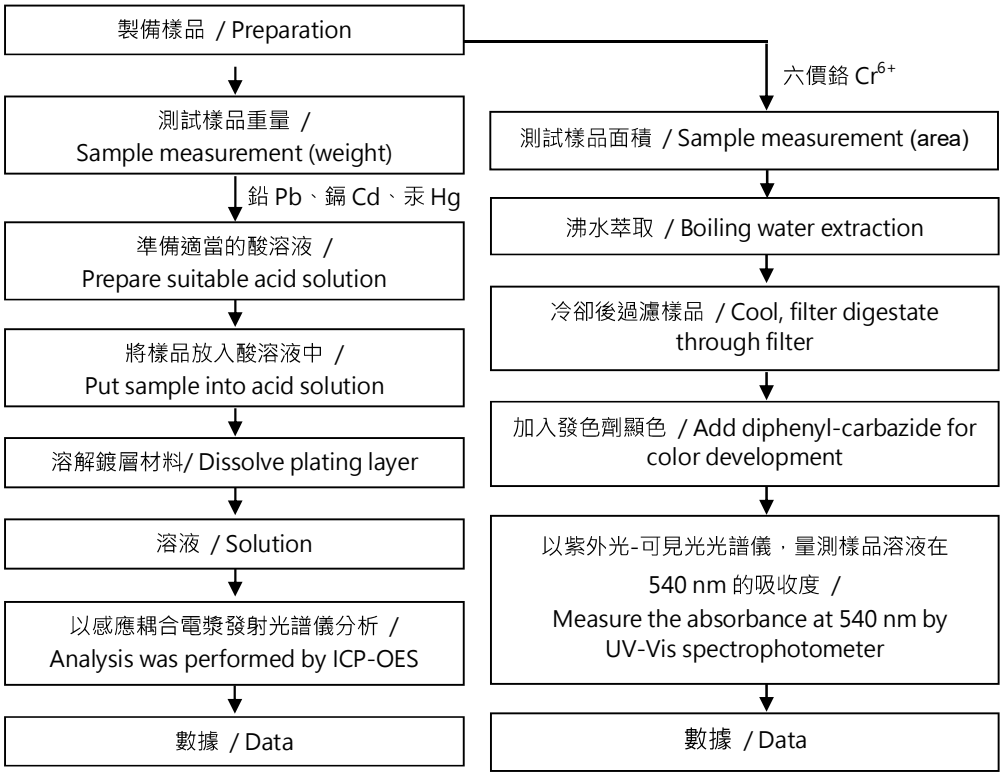
新北市五股區民義路一段240號 (NO. 240, SEC. 1, MINYI RD., WUGU DISTRICT, NEW TAIPEI CITY, TAIWAN)

鍍層重金屬測試流程圖 / Flow chart of stripping method for metal analysis

根據以下的流程圖之條件，樣品之外部鍍層已完全溶解。(六價鉻測試方法除外) / The plating layer of samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr^{6+} test method excluded)



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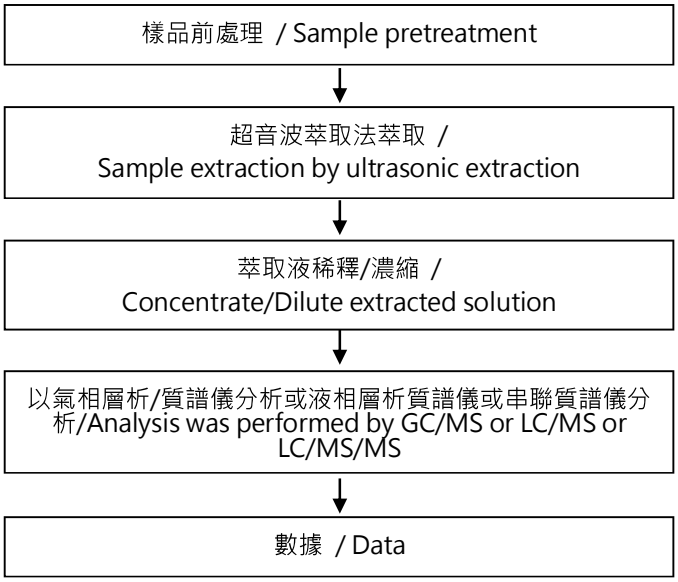
全氟化合物(包含全氟辛酸/全氟辛烷磺酸/其相關化合物等等)分析流程圖 / Analytical flow chart – PFAS (including PFOA/PFOS/its related compound, etc.)



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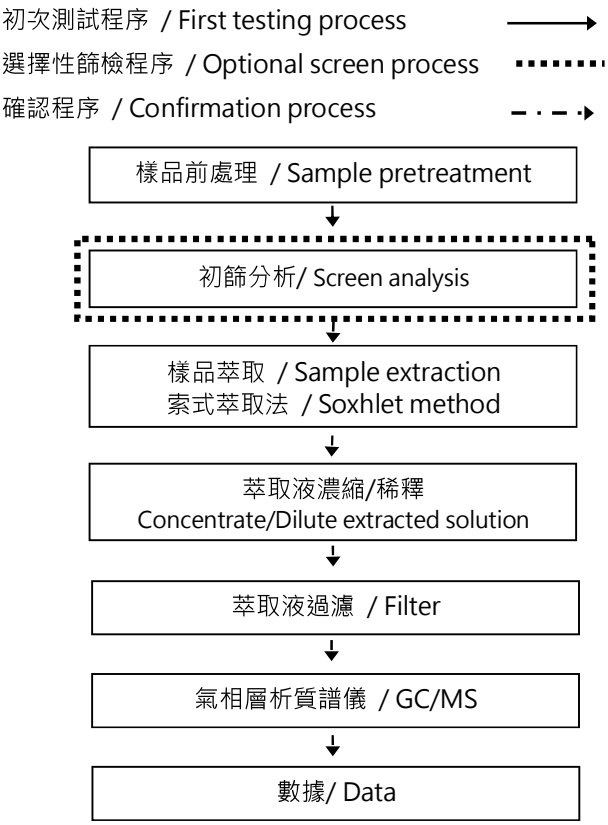
新北市五股區民義路一段240號 (NO. 240, SEC. 1, MINYI RD., WUGU DISTRICT, NEW TAIPEI CITY, TAIWAN)

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



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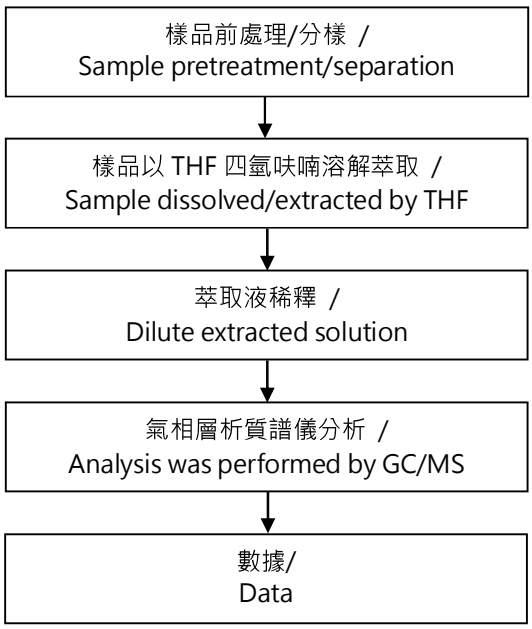
新北市五股區民義路一段240號 (NO. 240, SEC. 1, MINYI RD., WUGU DISTRICT, NEW TAIPEI CITY, TAIWAN)

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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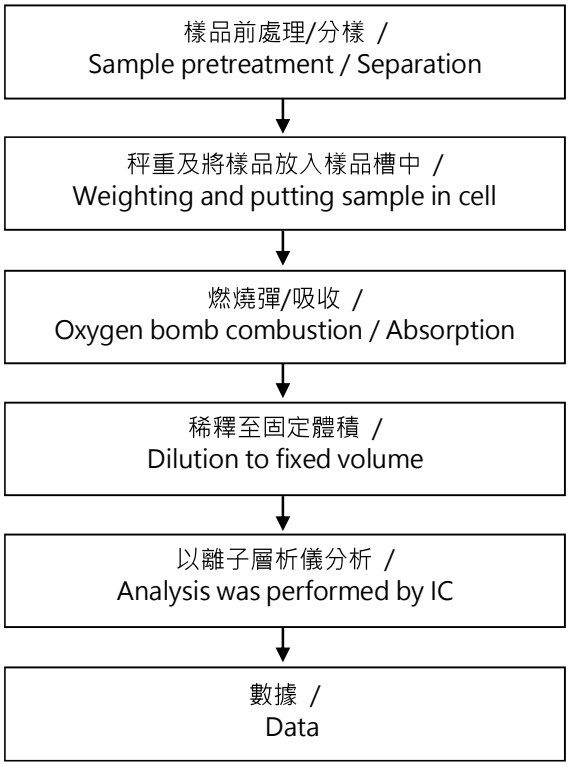
新北市五股區民義路一段240號 (NO. 240, SEC. 1, MINYI RD., WUGU DISTRICT, NEW TAIPEI CITY, TAIWAN)

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



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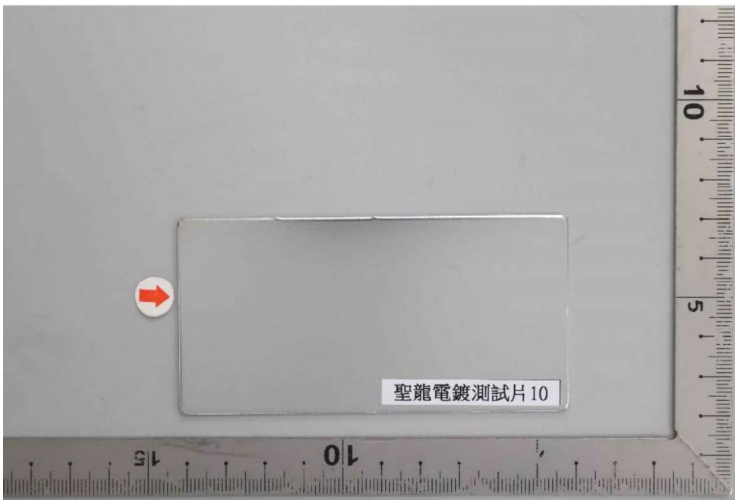
測試報告
Test Report

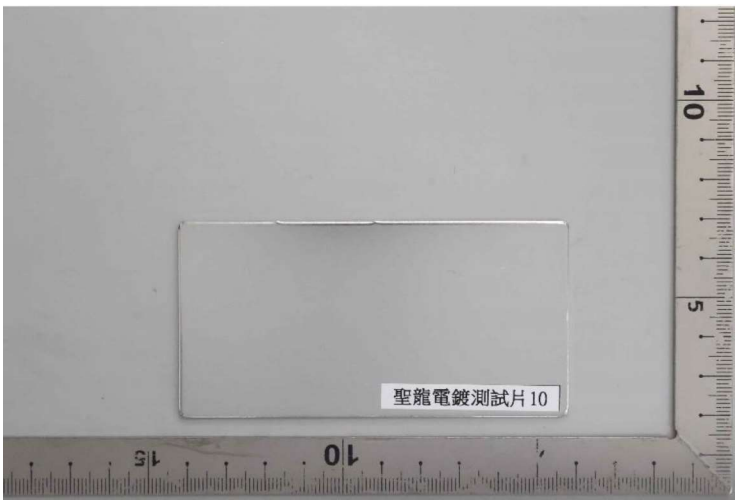
聖龍金屬表面處理有限公司 (GREAT DRAGON METAL ELECTROPLATING CO., LTD.)
新北市五股區民義路一段240號 (NO. 240, SEC. 1, MINYI RD., WUGU DISTRICT, NEW TAIPEI CITY, TAIWAN)

*** 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.)

ETR24304884 NO.1



ETR24304884 NO.2



** 報告結尾 (End of Report) **

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NIKKELVERK
A GLENCORE COMPANY

安全資料表

第 1 節 化學品及企業標識

1.1. 產品標識

物質名稱	鎳
識別號	028-002-00-7 (索引號)
註冊編號	1-2119438727-29-0003
同義詞	Nickel Squares, SUPERELECTRO TM, Full Plate Cathode, Nickel Crowns, D-Crowns, Micro Crowns, Sundries, Ribs, Starting Sheets
SDS 編號	227019GNV

1.2. 物質或混合物的相關確定用途以及不建議使用的用途

確定用途	零件和產品的製造和使用。 此產品的其他註冊用途可在本 eSDS 的第 15 節中找到。
使用防止建議	工人在工業環境中的用途 設計和製造含鎳的材料或物品，如果它們打算與鎳釋放量超過 REACH 法規 1907/2006（附件 XVII）規定的限制的皮膚長時間直接接觸。 製造含鎳食品接觸材料（鍍鎳鉻的材料除外），其向食品中的遷移量將超過 0.14 mg / kg 鎳（根據歐洲委員會和食品接觸材料和物品中使用的金屬和合金的 EDQM 準則 ，2013）。 製造用於外科植入物的含鎳高硫不銹鋼（AISI 303 級，或 ISO 7153-1 參考級 N）。. 在浸泡鍋中製造鍍鎳或鍍鉻鎳的加熱線圈。 專業工作者的用途 含鎳高硫不銹鋼（AISI 級 303，或 ISO 7153-1 參考級 N）用於外科植入物的應用的使用 在用於與皮膚直接和長時間接觸的材料或物品鎳用途，其中鎳釋放量超過限制載於 REACH 法規 1907/2006（附件 XVII）。 按消費者： 在用於與皮膚直接和長時間接觸的材料或物品鎳用途，其中鎳釋放量超過限制載於 REACH 法規 1907/2006（附件 XVII）。 使用含鎳食品接觸材料（鍍鎳鉻合金的材料除外），其向食品中遷移的量將超過 0.14 mg / kg 鎳（根據歐洲委員會和 EDOM 的規定） 關於用作食品接觸材料和物品的金屬和合金指南，2013 年）。 在浸入式水壺中使用鍍鎳或鍍鉻鎳的加熱線圈。

1.3. 資料表供應商的詳細信息

供應商	
公司名稱	Glencore Nikkelverk AS
地址	Postboks 604 4606 Kristiansand Norway
電話	+47 38 10 10 10
聯絡人	product.safety@glencore.com
電子郵件	product.safety@glencore.com
1.4. 緊急電話號碼	+1 760 476 3961 (333085)
一般在歐盟	112（一天 24 小時可用。SDS/產品信息可能不適用於緊急服務。）

第 2 節 危害識別

2.1. 物質或混合物的分類

已經對該物質/混合物進行了物理、健康和環境危害評估和/或測試，並適用以下分類

根據經修訂的（EC）1272/2008 號法規進行的分類

健康危害

皮膚過敏	第一類	H317 -可能引起皮膚過敏反應.
致癌性	第二類	H351 -懷疑引起癌症。
特定目標器官毒性–反複接觸	第一類 (肺，呼吸系統)	H372 -長期或反復接觸會對器官（肺，呼吸系統）造成傷害。

危害概述 可能引起皮膚過敏反應。 懷疑引起癌症。 長期或反復接觸會對器官造成傷害。

2.2. 標籤元素

根據經修訂的（EC）第 **12272/2008** 號法規的標籤

包含: 鎳

危害圖像



信號詞 危險

危害說明

H317 可能引起皮膚過敏反應。

H351 懷疑引起癌症。

H372 長期或反復接觸會對器官（肺，呼吸系統）造成傷害。

防範說明

預防

P201 使用前請獲得特別說明。

P260 請勿吸入煙塵。

P273 避免釋放到環境中。

P280 戴防護手套/穿防護服/戴防護眼罩/戴防護面具。

反應

P308 + P313 如果接觸到或有疑慮：求醫/就診.

儲存

P405 上鎖保管。

處置方式

P501 根據當地/區域/國家/國際法規處置內裝物/容器。

補充標籤信息 無

2.3. 其他危害 該物質不符合法規（EC）第 1907/2006 號附件 XIII 的 vPvB I PBT 標準。
該物質不包括在根據 REACH 第 59(1) 條建立的具有內分泌干擾物的清單中。 根據委員會授權條例 (EU) 2017/2100 或委員會條例 (EU) 2018/605 中規定的標準，該物質不被認為具有內分泌干擾特性。

第 3 節：成分的組成/資料

3.1.物質

一般信息

化學名稱	%	CAS-No. / EC No.	REACH 註冊號	索引號	註釋
鎳	85-100 %	7440-02-0 231-111-4	01-2119438727-29-0003	028-002-00-7	
分類: Skin Sens. 1;H317, Carc. 2;H351, STOT RE 1;H372					

成分備註 該產品根據 REACH 法規 1907/2006 註冊為單成分物質。 所有 H 語句的全文顯示在第 16 節中。
所有濃度均以重量百分比計。 有關更詳細的化學組成，請參閱分析證書。

第 4 節：急救措施

一般信息 如果暴露或擔心：尋求醫療建議/就診。 確保醫務人員了解所涉及的材料，並採取預防措施保護自己。
如果您感到不適，請就醫/尋求建議。 為所有燒傷尋求醫療護理，無論它們看起來多麼輕微。
向就診醫生出示此安全數據表。 重新使用前清洗受污染的衣服。

4.1. 急救措施說明

吸入 如果暴露在煙霧或微粒中：提供新鮮空氣，溫暖和休息，最好保持舒適的直立坐姿。
如果症狀持續，請就醫。

皮膚接觸 接觸灰塵：立即脫去污染的衣服。 用肥皂和水清洗皮膚。
如果發生濕疹或其他皮膚疾病：請尋求醫療救助並遵守這些說明。
如果接觸熔融產品，請用水迅速冷卻並立即就醫。 不要試圖從皮膚上去除熔融產品，因為皮膚很容易撕裂。
從皮膚上去除凝固的熔融材料需要醫療幫助。 割傷或擦傷應立即進行，徹底清潔患處。

眼睛接觸 不要揉眼睛。 取出隱形眼鏡（如果有）並且易於操作。
繼續沖洗。 立即用大量水沖洗眼瞼下至少 15 分鐘。
如果眼睛刺激持續存在：求醫/就診。

食入 用水清潔口腔，然後再喝大量水。 不要催吐。 如果仍然感到不適，請就醫

4.2. 最重要的症狀和影響 灰塵可能會刺激呼吸道，皮膚和眼睛。 可能引起皮膚過敏反應。

急性的和延遲的 皮炎。 皮疹。 長時間接觸可能引起慢性影響。 肺纖維化。 呼吸系統。

4.3. 任何需要立即就醫和特殊治療的指示　對症治療。 症狀可能會延遲。

第 **5** 節：消防措施

一般危害　粉塵可能與空氣形成爆炸性混合物。 請勿在熔融金屬上使用水：可能導致爆炸危險

5.1.滅火劑

合適的滅火劑　特殊粉末，用於不含金屬的乾粉化學藥品，純鹼，石灰或沙子水噴霧，霧或輕霧特殊粉末。

不合適的滅火劑　請勿使用噴水滅火器，否則會著火。

5.2. 物質或混合物產生的特殊危害　火災或高溫產生：金屬氧化物。 金屬煙霧。 粉塵或煙霧可能在空氣中形成爆炸性混合物。
在大火中，鎳可能形成羰基鎳，劇毒物質和已知的致癌物。

5.3. 給消防員的建議

消防人員的特殊保護設備　著火時，必須穿戴自給式呼吸器和全套防護服。 根據需要使用個人防護設備。

特殊滅火程序　讓無關人員離開。 如果可以的話，請從危險區域移走容器，不要冒險。

第 **6** 節：意外洩漏措施

6.1. 個人預防措施，防護裝備和應急程序

非緊急情況人員　確保足夠的通風。 讓不必要的人員遠離。 不要吸入灰塵。 避免與皮膚和眼睛接觸。
在清理過程中穿戴適當的防護設備和衣服。
非穿著適當的防護服，否則請勿觸摸損壞的容器或溢出的材料。
如果無法控制大量洩漏，應通知地方當局。

對於應急人員　遠離不必要的人員。 使用 SDS 第 8 節中建議的個人防護

6 2. 環境預防措施　避免釋放到環境中。 避免傳播灰塵或污染物質.

6.3. 圍堵和清理的方法和材料　在安全的情況下防止進一步洩漏或溢出。 收集溢出物。 讓溢出的材料凝固並用鏟子刮到合適的容器中，以便回收或處置。 使用帶有 HEPA 過濾器的真空吸塵器收集灰塵或微粒。 產品回收後，用水沖洗該區域。
切勿將溢出物放入原始容器中以供重複使用。
確保盡快將廢物和受污染的材料收集到工作區域並放入適當標記的容器中。

6.4 參考其他章節　有關廢物處理，請參閱安全技術說明書第 **13** 節。 有關個人防護，請參閱 SDS 的第 **8** 節。

第 **7** 節：處理和儲存

7.1. 安全處理的注意事項　使用前獲得特別說明。 在閱讀並理解所有安全預防措施之前，請勿操作。
工作區域的訪問應僅限於處理產品的人員。
如果可能，應在封閉系統中處理。 焊接、燃燒、鋸切、銅焊、研磨或機械加工操作可能會產生煙霧和灰塵。
提供足夠的通風。 使用適當的工具。 避免接觸鋒利的邊緣和熱表面。 避免粉塵的產生和擴散。
不要吸入灰塵。 避免與皮膚和眼睛接觸。 避免長時間暴露。 對過敏反應敏感的人不應接觸本產品。
如果接觸風險最小，孕婦不應使用該產品。 穿戴適當的個人防護裝備。 避免接觸熔融材料。
不要在熔融金屬上使用水。 使用本產品時請勿進食、飲水或吸煙。 遵守良好的工業衛生實踐。

7.2 安全存放的條件，包括任何不兼容性　存放地的方上鎖。 存放在乾燥的地方。 存放在通風良好的地方。 遠離不相容的材料存放。

7.3. 特定最終用途　確保遵守有關處理和儲存設施的所有當地法規。 遵守工業部門有關最佳做法的指南。
有關詳細信息，請參見第 **15** 節。
在暴露情景中給出的使用建議，已作為單獨的文件分發並作為附件隨附在本電子安全數據單中。

第 **8** 節：接觸控制/個人防護

8.1. 控制參數

職業接觸限值

愛爾蘭 職業接觸限值

材料	類型	數值
鎳 (CAS 7440-02-0)	TWA	0.5 mg/m3

生物極限值　沒有發現該成分的生物暴露極限。

推薦的監測程序　遵循工作場所測量時間表。

衍生無影響水平（**DNELs**）

普通人群

產品	數值	評估因素	說明
鎳 (CAS 7440-02-0)			
長期，局部，皮膚	0.0035 mg/cm2		
長期，局部，吸入	60 ng/m3		
長期，全身，吸入	60 ng/m3		
長期，全身，口服	0.011 mg/kg bw/天		

短期，局部，吸入	0.8 mg/m3
短期，全身，口服	0.37 mg/kg bw/天

工人

產品	數值	評估因素	說明
鎳 (CAS 7440-02-0)			
長期，局部，皮膚	0.0035 mg/cm2		
長期，局部，吸入	0.05 ng/m3		
長期，全身，吸入	0.05 ng/m3		
短期，局部，吸入	11.9 mg/m3		

預測無效應濃度（PNECs）

產品	數值	評估因素	說明
鎳 (CAS 7440-02-0)			
淡水	7.1 µg/l		
海水	8.6 µg/l		
二次中毒	0.12 mg/kg		
沉積物(淡水)	109 mg/kg		
沉積物(海水)	109 mg/kg		
土壤	29.9 mmol/mol		
汙水處理廠	0.33 mg/l		

暴露準則 未分配暴露標準

8.2. 暴露控制

適當的工程控制 應使用良好的一般通風。 通風率應與條件相匹配。 如果適用，使用工藝外殼、局部排氣通風或其他工程控制措施將空氣中的水平保持在推薦的暴露限值以下。 如果尚未建立接觸限值，請將空氣傳播水平保持在可接受的水平。 如果材料被研磨、切割或用於任何可能產生粉塵的操作，請使用適當的局部排氣通風裝置，以將暴露量保持在推薦的暴露限制以下。 如果灰塵/空氣濃度可能很高，請使用防爆設備。

個人防護措施，例如個人防護設備

一般信息 根據需要使用個人防護設備。 分開存放工作服。
應根據 CEN 標準並與個人防護設備的供應商討論選擇個人防護設備。

眼/臉防護 在有眼睛接觸危險的地方，戴防塵眼鏡。
除安全眼鏡或護目鏡外，在焊接，燃燒或釬焊過程中還需要帶有適當陰影防護罩的焊接頭盔。
在鋸，打磨或加工過程中，除防護眼鏡或護目鏡外，建議使用面罩。眼睛保護應符合標準 EN 166。

皮膚防護

- 手部防護 戴上合適的防護手套，以防割傷和擦傷。 例如。 3/4 型浸膠天然乳膠類型，具有鋼，玻璃纖維和凱夫拉爾纖維襯里和長針織袖口，防護等級為 5。
當材料被加熱時，戴手套以防止熱灼傷。 手套供應商可以推薦合適的手套。
所使用的防護手套必須符合法規（EU）2016/425 和相關標準 EN374 的規範。

- 其他 穿著合適的防護服。建議使用符合 EN 471 2 類標準的高能見度常規防護服
議使用符合 EN471 2 級標準的高可見度常規防護服。

呼吸系統防護 如果通風不足或有吸入灰塵的危險，請使用帶有顆粒過濾器（P3 型）的合適呼吸設備。
遵循 EN 529 的選擇、使用、保養和維護指南。請諮詢呼吸防護設備供應商。

熱危害 必要時穿適當的防熱服。

衛生措施 處理後要洗手。 使用產品時請勿進食，飲水或吸煙。 定期清洗工作服和防護設備以去除污染物。
私人衣服和工作服應分開存放。 按照良好的工業衛生和安全規範進行操作。 跟進任何醫療監視要求。

環境暴露控制 應檢查通風或工作過程設備的排放，以確保它們符合環境保護法規的要求。 可能需要對工藝設備進行煙氣洗滌器、過濾器或工程改造，以將排放量降低到可接受的水平。 控制洩漏並防止洩漏並遵守國家排放法規。
如果該材料釋放到環境中，請通知有關當局。

第 9 節：物理和化學性質

9.1. 基本物理和化學特性的信息

外觀

物理狀態	固體
形狀	固體形式如：顆粒。 切邊，團塊，片狀，陰極，切邊，未切邊和冠。
顏色	銀灰色
氣味	無臭
氣味閾值	無味
熔點/凝固點	1455°C (2651 °F)
初始沸點和沸騰	2730°C (4946 °F)

可燃性	不可燃
閃點	不適用
自燃溫度	不適用
分解溫度	在鎳化合物的分解過程中可能釋放有毒氣體和蒸氣（例如鎳）。
pH 值	不適用
運動粘度	不適用（材料為固體）。
溶解度	
溶解度(水)	不溶於水（在水中）。
分配係數（正辛醇/水）	不適用於無機物質。
蒸氣壓力	1 mm Hg (1810°C / 3290 °F)
密度/相對密度	
相對密度	8.9 (25 °C / 77 °F)
蒸氣密度	不適用（材料為固體）。
粒子特性	
粒徑	固體形式
9.2. 其他資訊	
9.2.1 相關信息	沒有可用的相關附加信息。
物理危險等級	
9.2.2. 其他安全特性	
蒸發率	屬性尚未測量。

第 10 節：穩定性和反應性

10.1. 反應性	塊狀金屬在正常的使用，儲存和運輸條件下穩定且無反應
10.2. 化學穩定性	該產品在正常使用、儲存和運輸條件下穩定。
10.3. 特殊狀況下可能之危害反應	不會發生危險的聚合反應。 不會發生危險反應。
10.4. 應避免之狀況	避免與不相容的材料接觸。與酸接觸會釋放出易燃的氫氣。
10.5. 應避免之物質	氧化材料。 強酸。
10.6. 危害分解物	焊接，燃燒，鋸切，釬焊，研磨或機加工操作可能會產生粉塵和金屬氧化物煙霧。

第 11 節: 毒性資料

一般信息	職業暴露於物質或混合物可能引起的不良影響
有關可能的接觸途徑的信息	
吸入	灰塵可能會刺激呼吸系統。 懷疑吸入致癌。 長期或反復吸入接觸會對器官造成損害。
皮膚接觸	灰塵或粉末可能會刺激皮膚。 可能引起皮膚過敏反應。
眼睛接觸	灰塵可能會刺激眼睛。
食入	可能被誤吞。 吞食可能會引起不適。 但是，攝入不太可能是職業接觸的主要途徑
症狀	灰塵可能會刺激呼吸道，皮膚和眼睛。 可能引起皮膚過敏反應。 皮炎。 皮疹。 長時間接觸可能引起慢性影響。 肺纖維化。 呼吸系統。

11.1 毒理作用資料

急毒性

在一項進行的動物實驗中確定了鎳金屬的急性口服毒性，該研究得出的結論是，
急性口服 LD50 大於> 9000 mg / kg 體重。 高濃度的金屬氧化物的新形成的煙霧/灰塵可產生金屬煙熱症狀。
尚未發現通過皮膚接觸對動物產生急性毒性的資料。
鑑於低的口服毒性和經皮膚的吸收可忽略不計，預計皮膚急性毒性較低

產品	種類	測試結果
鎳 (CAS 7440-02-0)		
急性		
口服		
LD50	老鼠	>9000 mg/kg

皮膚腐蝕/刺激	在使用兔子的皮膚刺激性研究中沒有刺激性 （動物數：2，劑量：500mg /動物的耳朵，暴露時間：24 小時，觀察時間：7 天）
嚴重眼損傷/眼刺激	尚未發現對金屬鎳刺激眼睛的研究。 來自水溶性鎳化合物噸的毒性數據可用於估計鎳金屬引起眼睛刺激的潛力。 對眼睛的刺激沒有提出分類。
呼吸道過敏	根據現有數據，不符合分類標準。

皮膚過敏	可能引起皮膚過敏反應。 存在來自人類研究的足夠數據，證明鎳金屬被歸類為皮膚致敏劑。
生殖細胞致突變性	根據現有數據，不符合分類標準。
致癌性	吸入可疑為人類致癌物.
國際癌症研究機構專著。 致癌性的綜合評價	
鎳 (CAS 7440-02-0)	2B 可能對人類致癌。
生殖毒性	根據現有數據，不符合分類標準。
特定標的器官系統毒性物質 - 單次暴露	根據現有數據，不符合分類標準。
特定標的器官系統毒性物質 - 重複暴露	長期或反複接觸會對器官（肺，呼吸系統）造成傷害。
吸入危害	由於產品的物理形式，因此沒有吸入危害。
混合物與物質信息	該產品是物質
11.2 有關其他危害的信息	
內分泌干擾特性	該物質不包括在根據 REACH 第 59(1) 條建立的具有內分泌干擾特性的清單中。 該物質對人體健康沒有內分泌干擾特性，因為它不符合法規 (EC) No 1907/2006、(EU) No 2017/2100 和 (EU) 2018/605 中規定的評估標準。
其他信息	金屬和合金的焊接或等離子弧切割會產生臭氧，一氧化氮和紫外線輻射臭氧過度暴露可能會導致粘膜刺激或肺部不適。 紫外線輻射可導致皮膚紅斑和焊工閃光。

第 12 節: 生態資料

12.1. 毒性 — 該產品未被歸類為對環境有害的。
然而，這並不排除大量或頻繁的洩漏可能對環境產生有害或破壞性影響的可能性。。

產品		種類	測試結果
鎳 (CAS 7440-02-0)			
水			
藻類	EC50	假單胞菌	0.18 mg/l, 72 hours
			0.174-0.311 mg/l, 96 hours Static
甲殼類	EC50	水蚤（水蚤）	100 mg/l, 48 hours
			1 mg/l, 48 hours Static
			0.174 - 0.311 mg/l, 96 hours Static
魚類	LC50	鯰魚	100 mg/l, 96 hours
		鯉魚(鯉魚)	10.4 mg/l, 96 hours Static
			1.3 mg/l, 96 hours Semi-static

12.2. 持久性及降解性	該產品不可生物降解。
12.3. 生物蓄積性	積累在土壤和沈積物中。 生物蓄積的潛力很低。
正辛醇/水分配係數因子（**log Kow**）	不適用於無機物質。
生物濃縮係數（**BCF**）	
270 mg/l	
種類：水生微生物	
12.4. 土壤中之流動性	大塊鎳在環境中不能移動。
12.5. PBT 和 **vPvB** 評估結果	該物質不符合法規（EC）1907/2006，附件 XIII 的 vPvB / PBT 標準。
12.6. 內分泌干擾特性	該物質不包括在根據 REACH 第 59(1) 條建立的具有內分泌干擾特性的清單中。 該物質對環境沒有內分泌干擾特性，因為它不符合法規 (EC) No 1907/2006、(EU) No 2017/2100 和 (EU) 2018/605 中規定的評估標準。
12.7. 其他不利影響	大量形式的鎳對環境的危害有限。 顆粒或粉塵形式的鎳對水生生物有害，並可能對環境造成長期不利影響。

第 13 節：廢棄處置

13.1. 廢物處理方法

殘留廢物	請按照當地法規進行處理。 如果可行，請回收再利用。 顆粒形式的固體金屬和合金可能具有反應性。 在處置之前，應確定其危險特性，包括火災和爆炸危險。
受污染的包裝	由於倒空的容器會殘留產品殘留物，因此即使倒空容器也要遵循標籤警告。 空容器應運至經批准的廢物處理場所進行回收或處置。
歐盟廢物法規	06 04 05 *廢物代碼應在用戶，生產者和廢物處理公司之間進行討論時分配。
處置方法/信息	請按照所有適用法規進行處理。 該材料及其容器必須作為危險廢物處理。

第 14 節: 運送信息

ADR

14.1. 聯合國編號	不作為危險品進行監管。
14.2. 聯合國正確運輸名稱	不作為危險品進行監管。
14.3. 運輸危險等級	
等級	未指定。
附屬風險	-
危險編號 (ADR)	未指定。
隧道限制代碼	未指定。
14.4. 包裝組	未指定。
14.5. 環境危害編號	無。
14.6. 用戶特別注意事項	未指定。

RID

14.1. 聯合國編號	不作為危險品進行監管。
14.2. 聯合國正確運輸名稱	不作為危險品進行監管。
14.3. 運輸危險等級	
等級	未指定。
附屬風險	-
危險編號 (ADR)	未指定。
隧道限制代碼	未指定。
14.4. 包裝組	未指定。
14.5. 環境危害編號	無。
14.6. 用戶特別注意事項	未指定。

AND

14.1. 聯合國編號	不作為危險品進行監管。
14.2. 聯合國正確運輸名稱	不作為危險品進行監管。
14.3. 運輸危險等級	
等級	未指定。
附屬風險	-
危險編號 (ADR)	未指定。
隧道限制代碼	未指定。
14.4. 包裝組	未指定。
14.5. 環境危害編號	無。
14.6. 用戶特別注意事項	未指定。

IATA

14.1. 聯合國編號	不作為危險品進行監管。
14.2. 聯合國正確運輸名稱	不作為危險品進行監管。
14.3. 運輸危險等級	
等級	未指定。
附屬風險	-
危險編號 (ADR)	未指定。
隧道限制代碼	未指定。
14.4. 包裝組	未指定。
14.5. 環境危害編號	無。
14.6. 用戶特別注意事項	未指定。

IMDG

14.1. 聯合國編號	不作為危險品進行監管。
14.2. 聯合國正確運輸名稱	不作為危險品進行監管。
14.3. 運輸危險等級	
等級	未指定。
附屬風險	-
危險編號 (ADR)	未指定。
隧道限制代碼	未指定。
14.4. 包裝組	未指定。
14.5. 環境危害編號	無。
14.6. 用戶特別注意事項	未指定。
14.7. 根據 **IMO** 文書進行的	不適用。 但是，該產品是固體。 散裝運輸時，不屬於《 IMSBC 規則》附錄 I 的範圍。

散裝海運

第 15 節: 法規資料

15.1. 物質或混合物的安全，健康和環境法規/法律。

歐盟法規

經修訂的（**EC**）第 **1005/2009** 號條例，關於消耗臭氧層的物質，附件 **I** 和 **II**。

未在名單中。

關於持久性有機污染物的（**EC**）第 **850/2004** 號條例，經修訂的附件 **I**。

未在名單中。

關於危險化學品進出口的法規（**EU**）**No.649 / 2012** 號法規，附件 **I**，第 **1** 部分，經修訂。

未在名單中。

關於危險化學品進出口的法規（**EU**）**No.649 / 2012** 號法規，附件 **I**，第 **2** 部分，經修訂。

未在名單中。

關於危險化學品進出口的法規（**EU**）**No.649 / 2012** 號法規，附件 **I**，第 **3** 部分，經修訂。

未在名單中。

關於危險化學品進出口的法規（**EU**）**No.649 / 2012** 號法規，附件 **V**，經修訂。

未在名單中。

法規（**EU**）**No.166 / 2006** 附件 **II** 污染物排放和轉移註冊管理機構。

鎳 (CAS 7440-02-0)。

法規 **(EC)** 第 **1907/2006** 號，**REACH** 第 **59(10)** 條候選清單，目前由 **ECHA** 發布。

未在名單中。

授權書

法規（**EC**）**1907/2006** 號。 經授權的 **REACH** 附錄 **XIV** 物質。

未在名單中。

使用限制

法規（**EC**）第 **1907/2006** 號，**REACH** 附件 **XVII** 經修訂的受營銷和使用限制的物質。

鎳 (CAS 7440-02-0)

指令 **2004/37 / EC**：經修訂的關於保護工人免受與致癌物質和誘變劑接觸相關風險的指令。

未在名單中。

其他歐盟法規

關於涉及危險物質的重大事故危害的指令 **2012/18 / EU**

未在名單中。

其他規定

根據修訂的法規（EC）1272/2008（CLP 法規）對產品進行分類和標記。
本安全數據表符合經修訂的法規（EC）1907/2006 及職業安全衛生法的要求。

國家法規

按照經修訂的指令 98/24/EC 遵守國家有關化學試劑工作的法規。
根據經修訂的指令 2004/37/EC，遵守關於保護工人免受工作中接觸致癌物和誘變劑風險的國家法規。
根據修訂後的歐盟關於保護工作中年輕人的指令 94/33/EC，18 歲以下的年輕人不得使用本產品。
根據經修訂的指令 92/85/EEC，如果接觸風險最小，孕婦不應使用該產品。

15.2. 化學品安全評估

對於這種物質，已經進行了化學安全性評估。

與此材料相關的暴露場景作為附件附加並作為本 eSDS 的單獨文件分發。

確定用途：
工人在工業環境中的用途
生產鎳金屬。
S4.A：不銹鋼特殊鋼和特殊合金的製造。
鋼鐵綜合製造。
電爐碳鋼。
粉末冶金。
金屬表面處理（電鍍鎳和電鍍鎳技術）。
由鎳金屬生產鎳鹽。
使用鎳正極製造電池。
催化劑的生產。
使用預先還原的含鎳催化劑。
磁鐵的生產
含鎳產品的生產（例如電子產品）。
生產釬焊合金。
使用釬焊合金。
生產銀鎳接觸材料。
使用銀鎳接觸材料。
濺射沉積。
通過蒸發技術沉積薄膜。

專業工作者的使用
使用釬焊合金。

使用銀鎳接觸材料。

消費者使用。
從含鎳水壺中喝水。
造幣
直接與皮膚長期接觸。
含鎳管道和水龍頭的飲用水。
食品接觸材料含鎳。
穿孔柱含鎳。
工具和其他含有鎳的脫模表面。

第 16 節：其他信息

縮略語表

PBT：持久，生物蓄積和有毒
vPvB：非常持久並且具有很高的生物蓄積性。
LD50：致死劑量，50%。
LC50：致死濃度為 50%。
EC50：有效濃度為 50%。
TWA：時間加權平均值。

參考

IUCLID：國際統一化學品資訊庫
IARC：國際癌症研究機構。
化學品安全報告。
ECHA 註冊物質數據庫。

導致混合物分類的評估方法的信息 不適用

未完整寫在下面的任何 H 陳述的全文

第 2 到第 15 節

H317 可能引起皮膚過敏反應。
H351 懷疑會致癌
H372 長期或反復接觸會對器官造成傷害。

該 SDS 在以下部分中包含修訂： 所有部分

培訓信息 處理此材料時，請遵循培訓說明。

免責聲明

此安全數據表是專門為符合稱為 REACH 的歐盟法規的要求而設計的–化學品註冊，評估和授權（歐洲議會和理事會於 2006 年 12 月 18 日發布的 EC No.1907 / 2006）和相應國家/地區法律，並且可能不符合任何其他安全產品處理法規的要求。該數據表以及健康，安全和環境信息是在以下指定日期被認為是準確的。
我們已經審查了從嘉能可集團公司以外的來源收到的所有信息。但是，對於本數據表中包含的數據和信息的準確性或完整性，不做任何明示或暗示的保證或陳述。本數據表中提到的健康和安全預防措施以及環境建議可能並不適用於所有個人和/或情況。用戶有義務安全地評估和使用本產品並遵守所有適用的法律和法規。在沒有有效許可的情況下，本數據表中的任何陳述均不得解釋為授予或暗示進行任何專利發明的許可建議或授權。對於因不正確使用材料，不遵守建議而造成的損壞或傷害，或材料本身固有的危害，嘉能可概不負責。

測試報告
Test Report

號碼(No.): ETR24501154　　日期(Date): 15-May-2024　　頁數(Page): 1 of 8

晉利實業有限公司 (JINN LIN PAINTS CO., LTD.)
新北市樹林區大安路145巷8號 (NO. 8, LANE 145, DAH AN RD., SHU LIN DISTRICT, NEW TAIPEI CITY, TAIWAN, R. O. C.)

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)　：　晉利實業有限公司 (JINN LIN PAINTS CO., LTD.)
樣品名稱(Sample Name)　：　混合塗料

==========

收件日(Sample Receiving Date)　：　08-May-2024
測試期間(Testing Period)　：　08-May-2024 to 15-May-2024

測試需求(Test Requested)　：
(1) 依據客戶指定，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, to test Cadmium, Lead, Mercury, Cr(VI), PBBs, PBDEs, DBP, BBP, DEHP, DIBP contents in the submitted sample(s).)
(2) 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

PIN CODE: BAF928E1

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測試報告
Test Report

晉利實業有限公司 (JINN LIN PAINTS CO., LTD.)
新北市樹林區大安路145巷8號 (NO. 8, LANE 145, DAH AN RD., SHU LIN DISTRICT, NEW TAIPEI CITY, TAIWAN, R. O. C.)

測試部位敘述 (Test Part Description)

No.1 : 深灰色塗料 (客戶自行調配之樣品) (DK. GRAY PAINT (SAMPLE IS BLENDED BY CLIENT))

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
鎘 (Cd) (Cadmium (Cd))	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.
鉛 (Pb) (Lead (Pb))	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.
汞 (Hg) (Mercury (Hg))	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.
六價鉻 Cr(VI) (Hexavalent Chromium Cr(VI))	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.
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.

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晉利實業有限公司 (JINN LIN PAINTS CO., LTD.)
新北市樹林區大安路145巷8號 (NO. 8, LANE 145, DAH AN RD., SHU LIN DISTRICT, NEW TAIPEI CITY, TAIWAN, R. O. C.)

測試項目 (Test Items)	測試方法 (Method)	單位 (Unit)	MDL	結果 (Result)
				No.1
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.
鄰苯二甲酸丁苯甲酯 (BBP) (Butyl benzyl phthalate (BBP))	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.
鄰苯二甲酸二丁酯 (DBP) (Dibutyl phthalate (DBP))		mg/kg	50	60.9
鄰苯二甲酸二(2-乙基己基)酯 (DEHP) (Di-(2-ethylhexyl) phthalate (DEHP))		mg/kg	50	n.d.
鄰苯二甲酸二異丁酯 (DIBP) (Diisobutyl phthalate (DIBP))		mg/kg	50	n.d.
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	116
氯 (Cl) (Chlorine (Cl)) (CAS No.: 22537-15-1)		mg/kg	50	580
溴 (Br) (Bromine (Br)) (CAS No.: 10097-32-2)		mg/kg	50	n.d.
碘 (I) (Iodine (I)) (CAS No.: 14362-44-8)		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
4. "-" = Not Regulated (無規格值)

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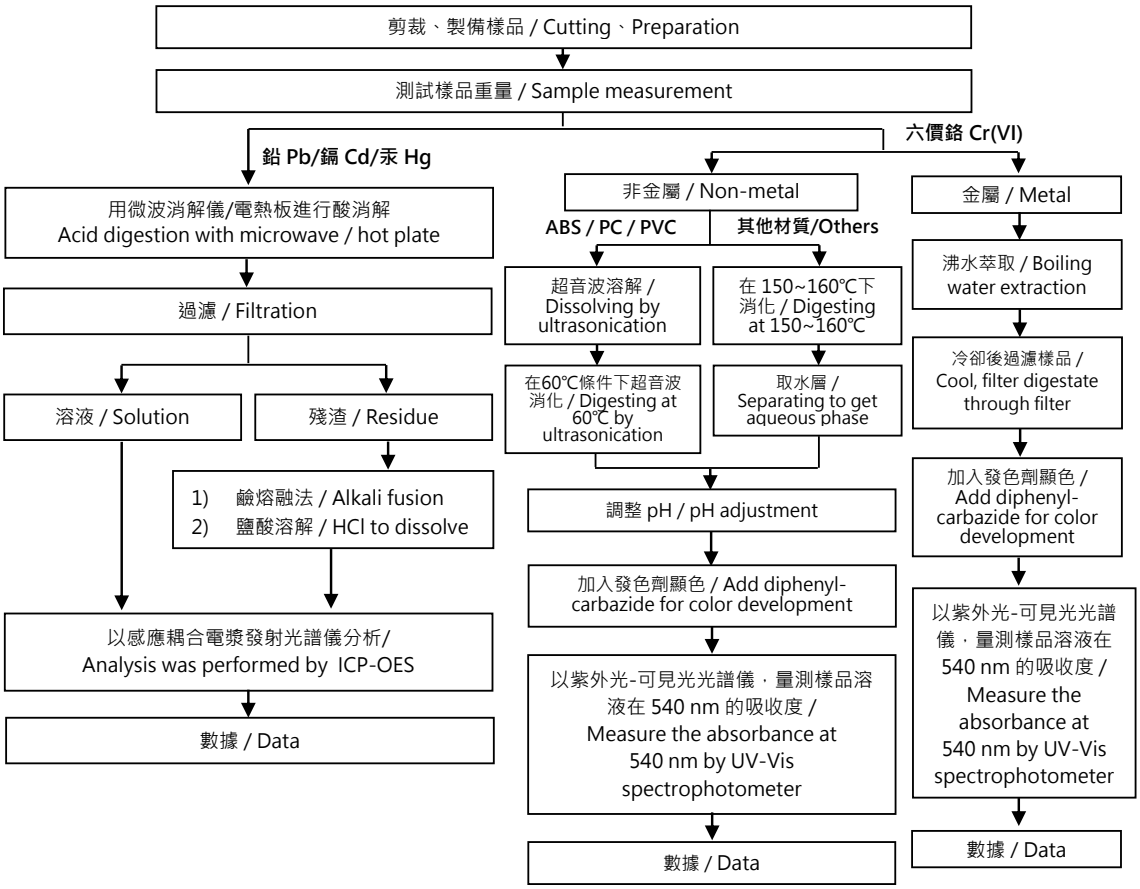
重金屬流程圖 / Analytical flow chart of heavy metal

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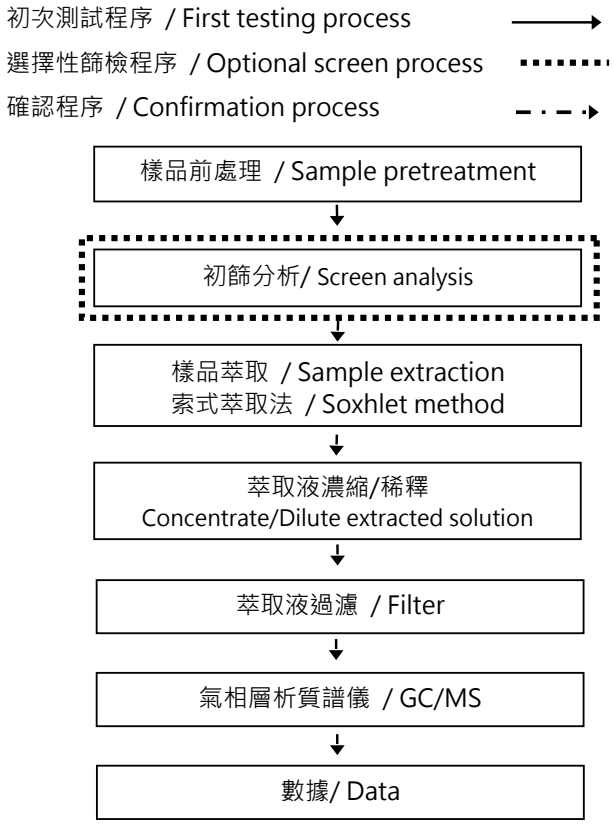
多溴聯苯/多溴聯苯醚分析流程圖 / Analytical flow chart - PBBs/PBDEs



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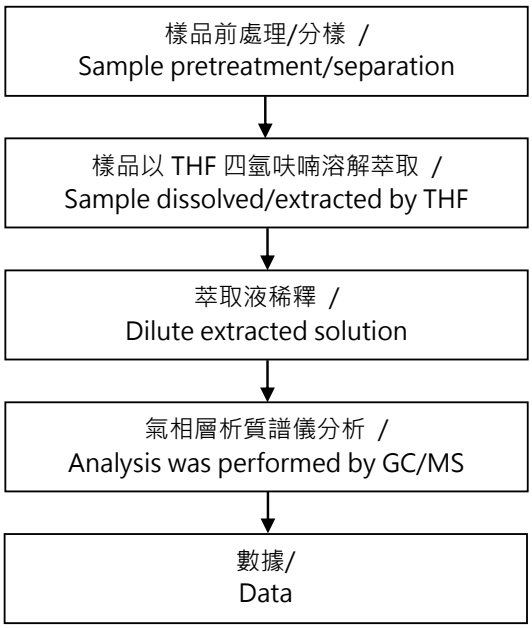
可塑劑分析流程圖 / Analytical flow chart - Phthalate

【測試方法/Test method: IEC 62321-8】



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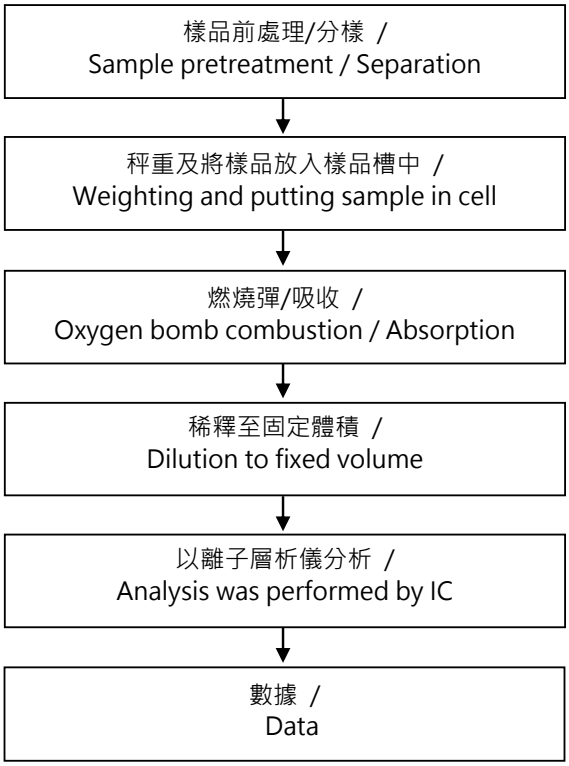
鹵素分析流程圖 / Analytical flow chart - Halogen



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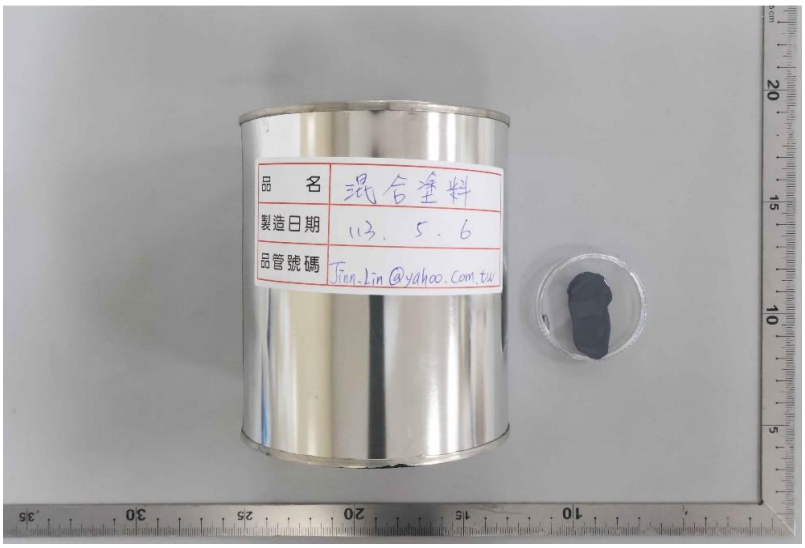
測試報告
Test Report

號碼(No.): ETR24501154　　日期(Date): 15-May-2024　　

晉利實業有限公司 (JINN LIN PAINTS CO., LTD.)
新北市樹林區大安路145巷8號 (NO. 8, LANE 145, DAH AN RD., SHU LIN DISTRICT, NEW TAIPEI CITY, TAIWAN, R. O. C.)

*** 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.)

ETR24501154



** 報告結尾 (End of Report) **

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物質安全資料表

一、物品與廠商資料

物品名稱：油漆溶劑-100(High-Flash Aromatic Naphtha-100)
其他名稱：芳烴碳氫化合物、Aromatic 100
建議用途及限制使用：高溶解力之溶劑，廣用於烤漆、油漆、凡立水等塗料調製，工業上多 用作殺蟲劑、木材防腐劑、人造樹脂、紡織品印染劑等之溶劑。
製造商或供應商名稱：晉利實業有限公司 地址：新北市樹林區潭底里大安路 145 巷 8 號 電話：02-2683-4494

二、危害辨識資料

物品危害分類：易燃液體第 3 級、腐蝕／刺激皮膚物質第 2 級、嚴重損傷／刺激眼睛物質 第 2 級、吸入性危害物質第 1 級、水環境之危害物質第 2 級（慢毒性）。
標示內容：  1.象徵符號：火焰、驚嘆號、健康危害及環境。 2.警示語：危險 3.危害警告訊息：(1)易燃液體和蒸氣。(2)造成皮膚刺激。(3)造成眼睛刺激。(4)如果吞食 並進入呼吸道可能致命。(5)對水生生物有毒並具有長期持續影響。 4.危害防範措施：(1)嚴禁煙火。(2)使用個人防護具。(3)火災時使用乾粉、泡沫、二氧化 碳、水霧等滅火。(4)皮膚沾染，眼睛濺傷，速以大量水沖洗。(5)誤食入 勿催吐，儘速送醫。
其他危害： -

三、成分辨識資料

混合物：

化學性質：芳香烴類	
危害物質成分之中、英文名稱	濃度或濃度範圍（成分百分比）
三甲苯 (Trimethylbenzene) CAS NO.25551-13-7	55～65

四、急救措施

不同暴露途徑之急救方法：

●吸入：趕快將中毒者帶離現場，移至安靜涼爽，通風良好的地方，如面色蒼白，使其平 躺，雙腳墊高; 如面色紅赧，則頭側向一邊，雙腳墊高，鬆開領口及皮帶，立即 送醫。

●皮膚接觸：將中毒者移開污染區，將感染皮膚外的衣服脫除，在水龍頭下用清水和肥皂 清洗感染處，如果皮膚感覺炙痛或刺痛，立刻送醫急救，將視同燙傷處理。 如果皮膚不痛不紅而只有乾燥感覺，可觀察六小時 再決定是否送醫。

●眼睛接觸：將中毒者移開污染區，在水龍頭或洗眼器下沖洗眼睛十五分鐘以上，並將上 下眼皮翻開慢慢轉動眼睛 使沖洗澈底，如果疼痛持續則送至眼科醫生處進一 步治療。

●食入：必須儘快將胃內之溶劑移除（可用活性碳 1g/kg 體重）。不要對中毒者施行催吐， 以免引起肺部併發症，同時鬆開領口及皮帶，立刻送醫。

最重要症狀及危害效應：會引起呼吸道、眼睛及皮膚之刺激作用，亦可能影響中樞神經系統。慢性與急性健康 危害效應相似，同時可能會影響生殖功能、肝、腎及心臟功能。

對急救人員之防護：

1.穿戴防護衣服(包含防溶劑手套)在安全區實施急救，以免接觸污染物。

2.戴化學護目鏡。

對醫師之提示：吸入中毒，可考慮用氧氣輔助呼吸。患者吞食時，考慮洗胃。

五、滅火措施

適用滅火劑：化學乾粉、泡沫、二氧化碳、水霧（勿用水柱大量噴灑）

滅火時可能遭遇之特殊危害：

加熱燃燒可能會釋出有毒碳氧化物或環狀碳氫化合物。易燃液體，蒸氣比空氣重，洩漏 會延地面傳播至遠處，遇著火源立即引燃，並有回火之危險。

特殊滅火程序：

(1) 用水滅火是無效的，但可噴水以冷卻火場之容器，以防膨脹爆炸。

(2) 滅火人員須穿戴防護具，在上風處滅火。

(3) 停止溶劑的外洩與流動並覆上滅火劑，隔離外洩區所有的火源如果可能儘量移開儲存 容器，或用水冷卻災區附近之容器，注意噴水時不要太靠近。

(4) 溶劑液體會浮於水面上，可能傳播至遠處而將火勢蔓延開。

(5) 易與氧化劑劇烈反應。

(6) 儘量使用自動或固定式滅火設備滅火，人員避免進入災區。

(7) 若外洩區還未著火，以水霧分散蒸氣，並保護阻止外洩人員的安全，但不得以水霧直 接噴灑洩出之油面。

消防人員之特殊防護設備：

消防人員須穿戴防護具，在上風處救火。若未攜帶適當防護裝置及空氣呼吸器，不得進 入密閉之空間。

六、洩漏處理方法

個人應注意事項： (1)污染區尚未完全清理乾淨前，限制非必要人員接近該區。 (2)確定止漏及清理工作是由受過訓練人員負責。 (3)穿戴防護裝備才能進入洩漏區，不可直接接觸漏出液，可能會導致中毒。
環境注意事項： (1)對該區進行通風換氣，注意機具要用防爆型。 (2)隔絕所有火源、熱源等發火源。 (3)通知政府安全衛生、環保、消防相關單位。 (4)避免洩出物進入下水道或密閉空間。
清理方法： (1)移走所有火源，不可接觸漏出液。 (2)封閉汙染區，附近人員撤離。 (3)用水噴灑現場，降低空氣中蒸氣濃度。 (4)洩漏時救災人員須配戴正壓式全面型自攜式呼吸防護具，其他人員速遠離現場。 (5)災區附近絕對嚴禁煙火。 (6)洩漏區施行有效通風，阻斷溶劑源，注意引爆濃度。 (7)如為小規模洩漏，可用砂或其他吸附劑吸收後放入乾淨密閉容器中再行處理。 (8)如為大規模洩漏則須建堤圍堵 (用土、砂袋、混凝土或 Polyurethane)，避免讓其擴散出去，再收集一起處理。 (9)不可將漏出液倒入排水溝中，以免燃燒爆炸。

七、安全處置及儲存方法：

處置： (1)此物質是易燃性液體及毒性液體，處置時工程控制應運轉及善用個人防護設備；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及不相容物。 (3)工作區應嚴禁煙火，並有“禁止抽煙”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輸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)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量用，操作區與貯存 區分開。
儲存：

(1)使用相容物質製成的貯存容器，分裝時小心不要噴灑出來。不要在貯存區進行調配工作。
(2)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。
(3)不要將受污染的液體倒回原貯存容器。
(4)容器要標示，不使用時保持緊密並避免受損。
(5)貯存區應標示清楚，通道無障礙物，限指定或受過訓的人員進入。
(6)檢查所有新進容器是否適當標示並無破損。
(7)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。
(8)以相容物質製成的貯存容器裝溢漏物。
(9)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備。
(10)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。
(11)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溢堤。

八、暴露預防措施

工程控制：
(1)使用不會產生火花且接地之通風系統並與其他排氣裝置系統分開，而直接排放至戶外。
(2)要採用局部排氣通風及製程隔離來控制空氣中蒸氣及霧滴之量。
(3)採排氣系統時須提供足夠之空氣來置換被排除之空氣。

控制參數：

危害物質成分	八小時日時量 平均容許濃度 TWA	短時間時量 平均容許濃度 STEL	最高容許濃度 CEILING	生物指標
三甲苯 (Trimethylbenzene）	25ppm (123 mg/m^3）	37.5ppm (184.5 mg/m^3）	-	-

個人防護設備：
呼吸防護：在危害濃度大於容許濃度以上，應使用適當呼吸防護具。
手部防護：若需接觸油料時，則戴適當的防護手套。
眼睛防護：不要讓油料進入眼睛。若有可能接觸到眼睛時，戴化學護目鏡。
皮膚及身體防護：若有可能接觸到皮膚與身體時，穿適當的防護衣服。

衛生措施：
(1)應使用合格之防護具，並每日檢查是否有破損，隨時更新。
(2)工作後儘速脫掉污染衣物，洗淨後才可穿戴或丟棄，且須告知清洗人員污染物之危害性。
(3)工作場所嚴禁抽煙或飲食。
(4)維持作業場所清潔。

九、物理及化學性質

外觀（物質狀態、顏色等）：無色液體	氣味：特殊芳香味

嗅覺閾值:-	熔點:-
pH 值：-	沸點／沸點範圍：155～175℃(311～347℉)
易燃性(固體、氣體)：／	閃火點： 38℃(100℉) 測試方法：閉杯
分解溫度：-	
自燃溫度：～250 ℃(～482℉)	爆炸界限：1.2%～7.5%（參考值）
蒸氣壓：0.2 kpa(25℃)	蒸氣密度（空氣=1）：>1
密度（水=1）：0.86~0.88 (15℃)	溶解度：微溶於水
辛醇/水份配係數(log Kow):-	揮發速率(正醋酸丁酯=1):0.2

十、安定性及反應性

安定性：常溫常壓下安定。
特殊狀況下可能之危害反應：避免加熱、嚴禁煙火及靜電產生，與空氣混合有爆炸之可能。
應避免之狀況：避免加熱、嚴禁煙火及靜電產生，隔絕各種發火源。
應避免之物質：強氧化劑（如過氧化物、硝酸鹽、過氯酸鹽）、羰基鎳(NICKEL CARBONY L) +氧(OXYGEN)。
危害分解物：熱分解會釋出有毒碳氧化物，如一氧化碳。

十一、 毒性資料

暴露途徑：吸入、皮膚、食入、眼睛
症狀：咳嗽、無胃口、反胃、嘔吐、頭痛、麻痺、肺充血、痙攣、皮膚炎、支氣管炎、記 憶衰退、四肢疼痛及麻痺、胸部緊和昏睡。
急毒性： 吸入： 三甲苯： 1.霧滴和蒸氣會造成鼻、咽喉及肺之刺激感。 2.症狀有頭痛、頭昏眼花、噁心、平衡感及注意力降低以及中樞神經系統機能抑制等其他症狀。 皮膚： 三甲苯：此物質為原發性皮膚刺激劑，會引起發紅、乾燥及脫脂等症狀。但未必會經 由皮層吸收。 食入： 三甲苯： 1.造成噁心、嘔吐、頭痛、頭昏眼花、精神混亂及其他中樞神經系統機能抑制之症狀。 2.大量則會失去意識甚至死亡，若液體被吸入肺部，會對肺部造成嚴重傷害 或死亡。 3.及其他影響與食入芳香烴類似。 眼睛：

三甲苯：霧滴及蒸氣可能造成刺激感，但無人類之研究資料。

(1)LC50（測試動物、暴露途徑）： 三甲苯：24 g/m3/4H (大鼠，吸入)。
(2)LD50（測試動物、暴露途徑）： 三甲苯：8970 mg/kg（大鼠，吞食）。

慢毒性或長期毒性：
吸入：
三甲苯：困倦、疲勞、頭痛、支氣管炎、血液凝結系統干擾、記憶衰退、四肢疼痛及 麻痺、行為改變等。

皮膚：
三甲苯：皮膚炎(腫包、發紅、發癢及龜裂)。此物質之毒性效應可能會因酒精之作用 而增加。不會累積於體內，小量會由肺排出，大部份會因新陳代謝而產生水 溶性化合物並由尿液排出。

十二、 生態資料

生態毒性：
1. LC50(魚類)：-
2. EC50(水生無脊椎動物)：-
3.生物濃縮係數(BCF)：-

持久性及降解性：
三甲苯：
1.氣態在大氣中會與光化學產物作用分解，其半衰期約一週至兩個月。
2.在土壤或水體中有氧情況下可被微生物分解。無氧情況下之厭氧微生物則無 法分解。
3.其在水體中會揮發至大氣中，由模擬河流及模擬湖泊試驗，半衰期分別為 3 小時及 4 天。
4.6.EC50：50mg/L,24 小時（水蚤）。
5.非脊椎動物毒性試驗 LC50：5400μg/L 96 小時（草蝦）。

生物蓄積性：三甲苯：水體中生物體內會蓄積。

土壤中之流動性：三甲苯：其在土壤中之移動性低，易被土壤吸附。

其他不良效應：若洩漏流佈至下水道或地下室，遇火源可能造成火災或爆炸。

十三、 廢棄處置方法

廢棄處置方法：
(1)安全且可行情況下，回收廢溶劑，其處理必須由受過訓且有經驗的人使 用適當防護設備於合格之操作設施執行。
(2)參考相關廢棄物法規處理。
(3)可採用特定焚化法處理。
(4)需符合相關環保法規。

十四、 運送資料

聯合國編號：UN 1268
聯合國運輸名稱：油漆溶劑-100
運輸危害分類：第三類易燃液體。
包裝類別：Ⅲ
海洋污染物（是/否）：否
特殊運送方法及注意事項：-

十五、 法規資料

適用法規： 1.勞工安全衛生設施規則。 2.危險物與有害物標示及通識規則。 3.有機溶劑中毒預防規則。 4.勞工作業環境空氣中有害物質容許濃度標準。 5.道路交通安全規則。 6.廢棄物清理法。 7.事業廢棄物貯存清除處理方法及設施標準。 8.公共危險物品及可燃性高壓氣體設置標準暨安全管理辦法。

十六、 其他資料

參考文獻	1.行政院勞工委員會 GHS 網站。 2.HSDB 資料庫，CHEMpendium 光碟，99-3。 3.OHS 光碟資料庫。 4.TLVs and Other Occupational Exposure Values，ACGIH 光碟，1999.
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