WIELAND

ELECTROPLATING GUIDE & CATALOGUE

WIEL

ABOUT WIELAND

Palloys is committed to innovation, quality, reliability and continued support of the jewellery industry - so our customers' success becomes our success. That's why we are so proud to be Australia's exclusive distributor of Wieland Plating products.

Wieland is acknowledged as the leading brand of plating products in the precious metals industry. The portfolio comprises of a wide range of electrolytes used in both functional and decorative electroplating.

HOW TO ORDER?

Simply call, email, fax or log online to place an order.

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PALLION®

Wieland and Palloys are part of Pallion. Pallion is Australasia's premier precious metals service group.

We employ Australia's most experienced team of metallurgists, chemists, designers and fabricators to ensure that all Pallion products are of the finest quality. Our scale means that we are able to deliver superior value. With distribution offices in Sydney, Melbourne, Brisbane and Perth, coupled with volume manufacturing capability in Hong Kong and mainland China through our subsidiary Goldenage International. Pallion offers its clients unmatched geographical reach and customer service.

Pallion offers a full service solution for precious metals including:

- **Bullion -** Pallion is the exclusive distributor of one of the cornerstones of the Australian gold trading system - ABC Bullion, the Australian Bullion Company.
- **Refining & Minting -** Pallion operates Australasia's largest and most technologically advanced independent precious metal refining and minting facility – ABC Refinery.
- **Casting & Custom Jewellery -** Pallion operates Australia's premier jewellery casting and custom jewellery production service at Palloys and Goldenage International.
- **Fabricated Products -** Pallion manufactures and supplies the AGS|PJW and A&E Metals range of superior fabricated metal products in the full spectrum of standard and custom sizes and forms including sheet, wire, chenier and solder. Pallion is the exclusive Australian distributor of Wieland Eletroplating Products, widely acknowledged as the leading global brand of plating products in the precious metal industry.
- **Findings -** Pallion is the exclusive Australian distributor of the Regentco and A&E Metals brand of jewellery findings. With a comprehensive range of findings in carat gold and sterling silver, Regentco findings can also be supplied incorporating client logos.
- **Vaulting -** Pallion provides secure vaulting services at Custodian Vaults, Australia's premier secure storage facility.

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01 | INTRODUCTION

Please note: Products that are marked with a skull symbol require a poisons licence. An *'Authorisation to Possess Cyanide'* is free of charge and can be obtained from your relevant health department in the state you reside. If you have any enquiries or require assistance with purchasing, please contact us for extra information. All products that require a poisons licence must be couriered by road freight or pick up and can not be sent through postal courier.

For more information regarding a poisons licence, visit your relevant state *web page* below.

NSW	bit.ly/NSW-poisonslicence	**VIC**	bit.ly/VIC-poisonslicence	**QLD**	bit.ly/QLD-poisonslicence
WA	bit.ly/WA-poisonslicence	**SA**	bit.ly/SA-poisonslicence	**NT**	bit.ly/NT-poisonslicence
TAS	bit.ly/TAS-poisonslicence				

ELECTROPLATING IS USUALLY DONE FOR A FEW REASONS:

- TO ENHANCE THE COLOUR OF THE PIECE
- TO PROTECT THE UNDERLYING METAL FROM DISCOLOURATION OR CORROSION
- TO PRODUCE A DIFFERENT OR MORE UNIFORM COLOUR TO THE PIECE

When it comes to electroplating, there are a few basic rules that need to be followed to ensure a satisfactory end result. Failure to observe these rules by introducing shortcuts will only result in very small initial time savings, with plenty of time to do it all again properly!

It is important to follow the instructions that come with the electroplating salts or solutions. Where salts or solutions require the addition of water, it is critical that *distilled water* be used as it is chemically pure and therefore does not contain any possible contaminants that could give rise to potential plating defects.

The rectifier should be of the required output and the containers for the plating solutions and wash containers should be made of an inert material such as glass or plastic so that they are able to withstand heat if required and not react with the chemicals, as some are cyanide based.

Anodes should be of the required standard and cleaned when needed.

Distilled water is also referred to as deionised water or demineralised water.

02 GUIDE TO ELECTROPLATING

ELECTROPLATING STEPS & SETUP FLOWCHART

Polish

Ultrasonic Degrease

Wash in Clean Water

Electrolytically Clean

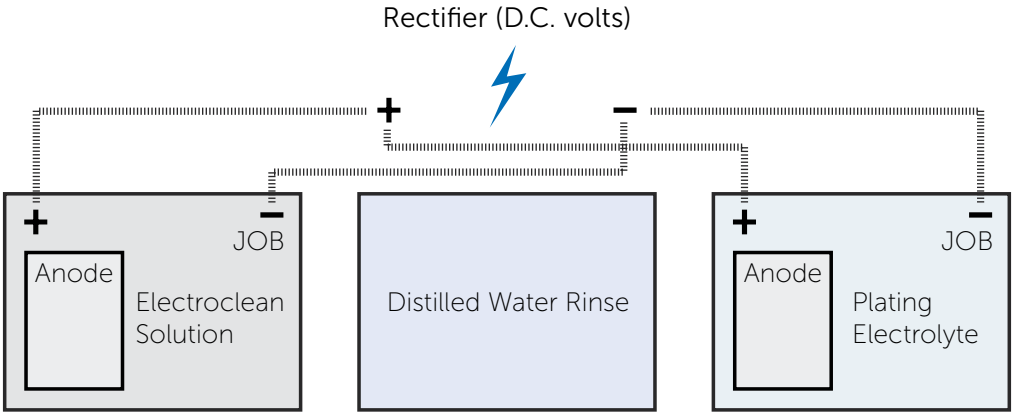
Hot Water Rinse

Distilled Water Rinse

Electroplate

Wash in Clean Water

Dry

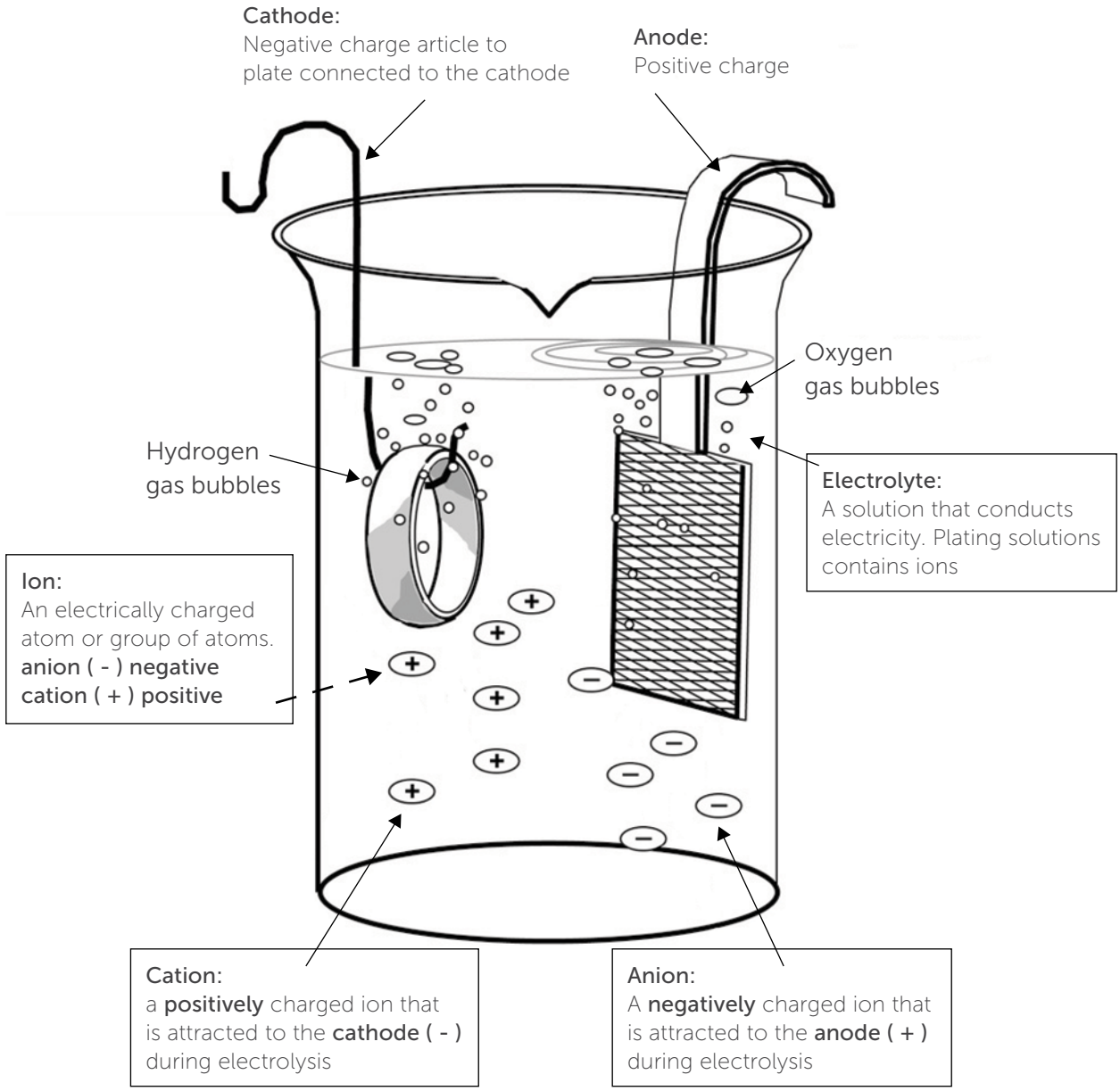


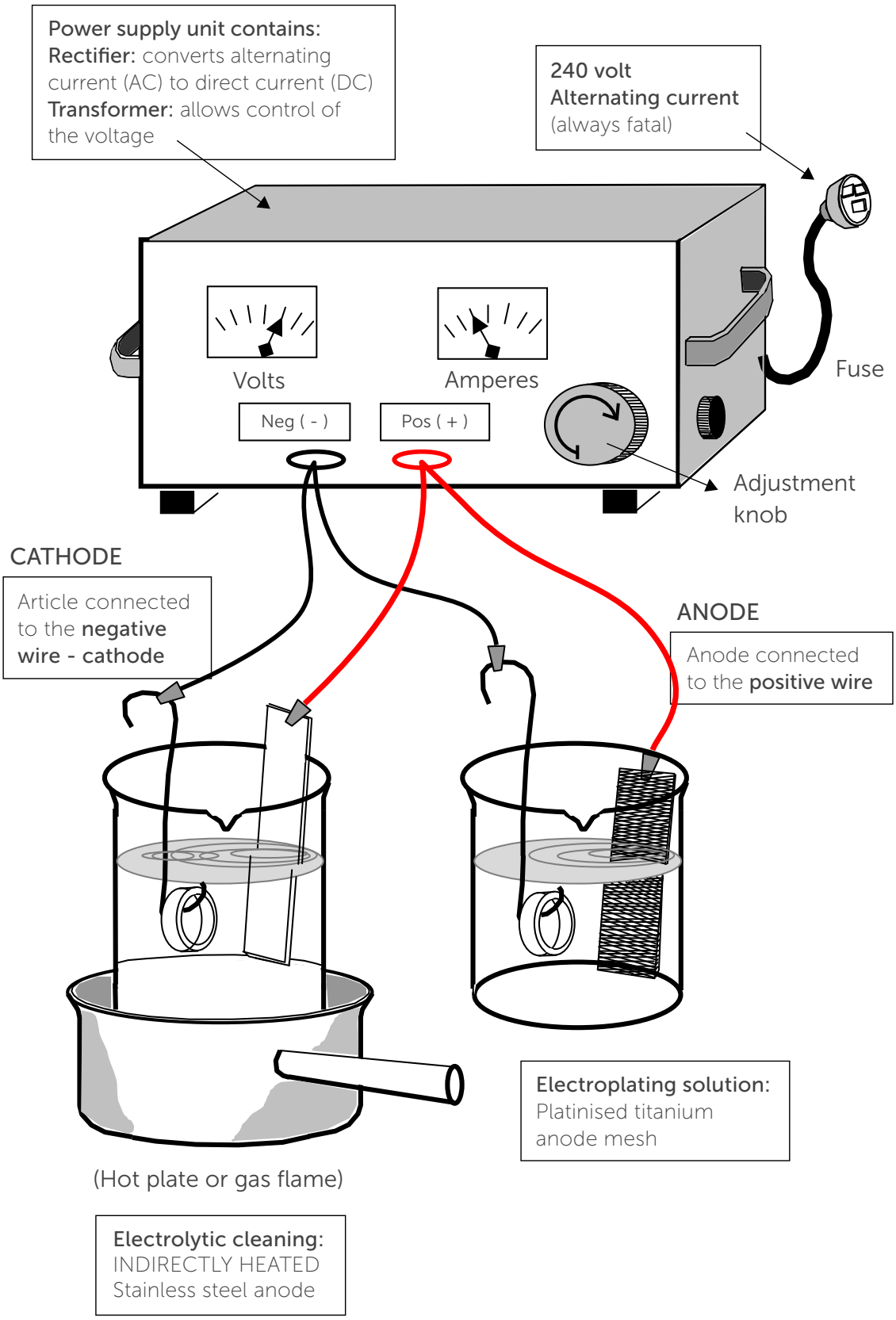
Notes:

- The item should be well polished, as the electroplating will tend to reflect the lustre of the piece prior to plating.
- The item then needs to be thoroughly degreased - this is best achieved in an ultrasonic cleaner.
- The item should then be electrolytically cleaned to produce a chemically clean surface. On removal from the electrocleaning solution, the item should be thoroughly rinsed in hot tap water and inspected. If the film of water on the item is unbroken, then it can be finally rinsed in distilled water and proceed to the next step. If the film of water is broken, then the electrocleaning step should be redone. Thorough cleaning is essential prior to plating otherwise the plated deposit will have poor adhesion and will peel off in extreme cases.
- The item may now be introduced into the plating solution and plated. Not following the instructions may result in the colour of the deposit being poor or wrong.
- At the conclusion of plating, the item needs to be removed and thoroughly rinsed and dried.

When we plate a piece of jewellery, we are using electricity to facilitate the process. Liquids are excellent conductors of electricity and happen to be an excellent medium within which precious metals can be dissolved for plating (electrolyte). There are two common forms of electrolytes used for plating precious metals: acid-based (rhodium plating) and cyanide based (gold plating). It is very important to separate these two plating solutions as acids and cyanides as they can combine to form hydrogen cyanide gas, which is lethal.

When your jewellery item is immersed and electrical currents pass through the solution by means of an anode (+) and a cathode (-), electrolysis is taking place. The jewellery item is connected to the cathode and negatively charged; whilst the positively charged anode is suspended in the electrolyte. When electrical current is flowed through the solution, the gold or rhodium dissolved in the electrolyte is deposited onto the cathode or piece of jewellery to be plated. The amount of electricity used (volts) will determine the amount of time needed to evenly plate the item. The catch here is that too high a voltage can result in burning of the plate surface.




Power supply unit contains:
Rectifier: converts alternating current (AC) to direct current (DC)
Transformer: allows control of the voltage
240 volt
Alternating current
(always fatal)
Volts
Amperes
Neg (-)
Pos (+)
Fuse
Adjustment knob
CATHODE
Article connected to the negative wire - cathode
ANODE
Anode connected to the positive wire
Electroplating solution:
Platinised titanium anode mesh
(Hot plate or gas flame)
Electrolytic cleaning:
INDIRECTLY HEATED
Stainless steel anode

03 | HOW TO PURCHASE PLATING EQUIPMENT & CHEMICALS

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Palloys is the exclusive Australian distributor of Wieland Electroplating products, suitable for Jewellers and Hobbyists. These items are kept in stock for your convenience and can be shipped Australia Wide.

To purchase any Wieland product, simply call, fax, email or visit our website.

PRODUCT LIST

STOCK NUMBER	DESCRIPTION	POISONS LICENCE
52/AU750SI	WILAPLAT 750 SI GOLD PLATING (Au 4gm/l), 1l	REQUIRED
52/AUBG1L	AUROSTEEL BRIGHT GOLD PLATING (Au 4gm/l), 1l	REQUIRED
52/AUBP1L	AUROSTEEL HARD GOLD BASE PLATING (Au 4gm/l), 1l	REQUIRED
52/GP1000	WILAPLAT GILDING SALT (1000) FINE GOLD, 1l	REQUIRED
52/GP1055	WILAPLAT GILDING SALT (1055) YELLOW, 1l	REQUIRED
52/GP2010	WILAPLAT GILDING SALT (2010) PLAT GOLD, 1l	REQUIRED
52/GP2015	WILAPLAT GILDING SALT (2015) YELLOW/PINK, 1l	REQUIRED
52/RUBL1L	WILAPLAT BLACK RUTHENIUM PLATING (Ru 5gm/l), 1l	
52/RHBL200	WILAPLAT BLACK RHODIUM (Rh 2gm/l), 100ml	
52/RHWH200	WILAPLAT BLANCADUR TI WHITE RHODIUM (Rh 2gm/l), 100ml	
52/AGBP1L	WILAPLAT BRIGHT SILVER PLATING (Ag 30gm/l), 1l	REQUIRED
52/AGPL1L	ARCUPLAT SILVER PLATING (Ag 30gm/l), 1l	REQUIRED
52/A6208	ARCUPLAT SILVER CONDUCTING POWDER, 10gm	
52/SZFM10L	WILAPLAT ZFM CLEANING SALTS, 1kg	
52/SZFM1L	WILAPLAT ZFM CLEANING SALTS, 1l	
52/ULPUR1K	WILAPLAT PURO-S ULTRASONIC CLEANING SALTS, 1kg	
52/PREN1	NICKEL PRE-PLATING BATH, 1l	
52/NIRH1	NICKEL PLATING BATH, 1l	
52/AUCF90	CYANIDE FREE GOLD POLISHING BATH, 1l	
52/ARGOPOL	ELECTROLYTIC SILVER POLISHING BATH (ARGOPOL), 1l	REQUIRED
52/RDBL100	RHODINETTE BLACK RHODIUM (Rh 2gm), 100ml	REQUIRED
52/RDWH100	RHODINETTE WHITE RHODIUM (Rh 2gm), 100ml	REQUIRED
52/RDFG100	RHODINETTE FINE GOLD ELECTROLYTE (Au 2gm), 100ml	REQUIRED
52/RDRG100	RHODINETTE RED-GOLD BATH (Au 2gm), 100ml	REQUIRED
52/RDFS100	RHODINETTE SILVER BATH 100ML (Ag 3gm), 100ml	REQUIRED
52/RDYG100	RHODINETTE YELLOW-GOLD BATH (Au 2gm), 100ml	REQUIRED
52/ZZRDCPT	RHODINETTE COMPLETE UNIT	
52/ZZANCUL	CU ANODE, 100mm x 50mm	
52/ZZANNIL	NICKEL ANODE, 100mm x 50mm	
52/ZZANPTL	PLATINUM/TITANIUM ANODE, 60mm x 90mm	
52/ZZANPTS	PLATINUM/TITANIUM ANODE, 30mm x 90mm	
52/ZZANSSL	STAINLESS STEEL ANODE, 110mm x 60mm	
52/ZZPLSTP	MASKING PEN	
52/ZZRDCLP	CABLE WITH WORKPIECE CLIP	
52/ZZRDDSH	ELECTROLYTE CONTAINER WITH LID	
52/ZZRDPLT	CONTACT PLATE	
52/ZZRDFLG	FIBRE ELECTRODES (PKT 5)	
52/ZZRDFSM	SPECIAL FIBRE ELECTRODES (PKT 3)	
52/ZZRDPEN	RHODINETTE PLATING PEN	

04 HARD GOLD PLATING PRODUCTS

WHAT IS HARD GOLD PLATING?

Used to provide a hard and wear-resistant surface.
E.g. Base metal - watch cases and chains.

WILAPLAT 750 SI GOLD PLATING (Au 4gm/l), 1l

Code: 52/AU750SI

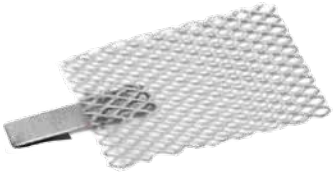
AUROSTEEL HARD GOLD BASE PLATING (Au 4gm/l), 1l

Code: 52/AUBP1L

AUROSTEEL BRIGHT GOLD PLATING (Au 4gm/l), 1l

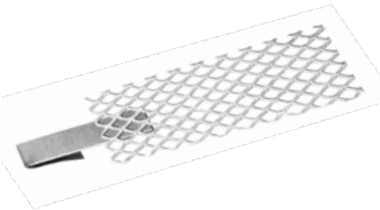
Code: 52/AUBG1L

RECOMMENDED ANODES:



PLATINUM/TITANIUM ANODE, 60mm x 90mm

Code: 52/ZZANPTL



PLATINUM/TITANIUM ANODE, 30mm x 90mm

Code: 52/ZZANPTS

05 GOLD ELECTROPLATING GILDING PRODUCTS

WHAT IS GILDING?

Term used to describe gold plating.

Alkaline Plating process:

- Potassium gold cyanide

WHAT TYPES OF GILDING ARE THERE?

1. **Flash deposit - minimum thickness 0.5 micron (0.0005mm)**
   - Soluble anode process:
     - Fine gold anode: replenishes electrolyte
     - Pyrex container
   - Insoluble anode process:
     - Anode: stainless steel, platinum, platinised titanium
     - Pyrex container
   - Temperature: 50 - 70 degrees Celsius
   - Voltage: 3 - 4 volts
   - Duration: 10 - 20 seconds
2. **Heavy deposits - approximate thickness 1 micron (0.001mm)**
   - Soluble anode process recommended
   - Temperature: 50 - 70 degrees Celsius
   - Voltage: 2 volts or below (adjust voltage to ensure that no gas evolves from article - agitation is required)
   - Duration: 7 minutes or longer (dependent on thickness required)

WILAPLAT GILDING SALT (1000) FINE GOLD, 1l

Code: 52/GP1000

WILAPLAT GILDING SALT (1055) YELLOW, 1l

Code: 52/GP1055

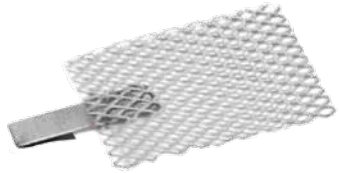
WILAPLAT GILDING SALT (2010) PALE GOLD, 1l

Code: 52/GP2010

WILAPLAT GILDING SALT (2015) YELLOW/PINK, 1l

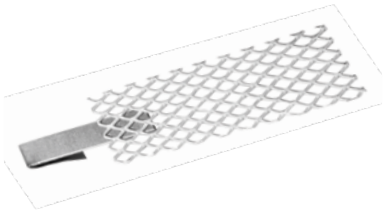
Code: 52/GP2015

RECOMMENDED ANODES:



PLATINUM/TITANIUM ANODE, 60mm x 90mm

Code: 52/ZZANPTL



PLATINUM/TITANIUM ANODE, 30mm x 90mm

Code: 52/ZZANPTS

STAINLESS STEEL ANODE, 110mm x 60mm

Code: 52/ZZANSSL

06 SILVER & PLATINUM ELECTROPLATING PRODUCTS

BLACK RHODIUM VS BLACK RUTHENIUM

Both Black Rhodium and Black Ruthenium plating materials will achieve a grey through to black colouration but in nearly all cases, ruthenium will provide a darker appearance. Put simply black rhodium produces more of a graphite colour on precious metals whereas ruthenium produces a lustrous anthracite colouration. It is also worth noting that black rhodium's hardness is less than that of its cousin white rhodium - black rhodium measures 350HV compared to white Rhodium at 700HV. Black ruthenium has a hardness of 450HV.

SILVER PLATING

For decorative applications, bright silver baths are usually used to achieve a very bright silver finish. The brilliant fine silver deposit is often used as a coating for items made out of sterling silver, because it is somewhat more resistant to oxidisation than a silver alloy containing copper. The fine silver deposits are very evenly distributed and can be up to 50µm thick.

WILAPLAT BLACK RUTHENIUM PLATING (Ru 5gm/l), 1l

Code: 52/RUBL1L

WILAPLAT BLACK RHODIUM (Rh 2gm/l), 100ml

Code: 52/RHBL200

WILAPLAT BLANCADUR TI WHITE RHODIUM (Rh 2gm/l), 100ml

Code: 52/RHWH200

WILAPLAT BRIGHT SILVER PLATING (Ag 30gm/l), 1l

Code: 52/AGBP1L

ARCUPLAT SILVER PLATING (Ag 30gm/l), 1l

Code: 52/AGPL1L

ARCUPLAT SILVER CONDUCTING POWDER, 10gm

Code: 52/A6208

07 CLEANING & ACTIVATING PRODUCTS

Electroplating affects the surface of an item; therefore it is important that the surface is clean and free from such things as oils, fingerprints and polishing compounds. If there is an obstruction on the surface, the plated material will not successfully adhere to the item, resulting in either patchy plating or discolouring.

Cleaning salts are used to prepare the surface for the plating of precious metals by scouring the surface with hydrogen bubbles, which remove any light forms of surface contamination. Cleaning salts will not remove large deposits of dirt and grime. If an item is very dirty, it must first be thoroughly cleaned in an ultrasonic cleaner before applying cleaning salts.

WILAPLAT ZFM CLEANING SALTS, 1kg

Code: 52/SZFM10L

WILAPLAT ZFM CLEANING SALTS, 1l

Code: 52/SZFM1L

WILAPLAT PURO-S ULTRASONIC CLEANING SALTS, 1kg

Code: 52/ULPUR1K

NICKEL PRE-PLATING BATH, 1l

Code: 52/PREN1

NICKEL PLATING BATH, 1l

Code: 52/NIRH1

CYANIDE FREE GOLD POLISHING BATH, 1l

Code: 52/AUCF90

ELECTROLYTIC SILVER POLISHING BATH (ARGOPOL), 1l

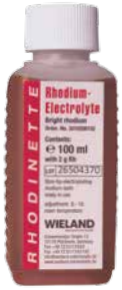
Code: 52/ARGOPOL

08 RHODINETTE PEN PLATING PRODUCTS

Rhodinette Complete Unit and solutions are used to plate fine details and small areas.

RHODINETTE BLACK RHODIUM (Rh 2gm), 100ml

Code: 52/RDBL100



RHODINETTE WHITE RHODIUM (Rh 2gm), 100ml

Code: 52/RDWH100

RHODINETTE FINE GOLD ELECTROLYTE (Au 2gm), 100ml

Code: 52/RDFG100

RHODINETTE RED-GOLD BATH (Au 2gm), 100ml

Code: 52/RDRG100

RHODINETTE SILVER BATH 100ML (Ag 3gm), 100ml

Code: 52/RDFS100

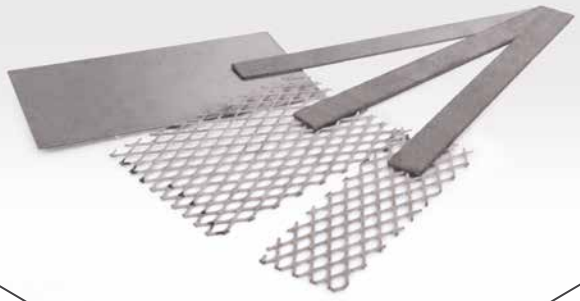
RHODINETTE YELLOW-GOLD BATH (Au 2gm), 100ml

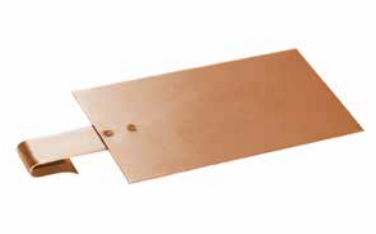
Code: 52/RDYG100

RHODINETTE COMPLETE UNIT

Code: 52/ZZRDCPT

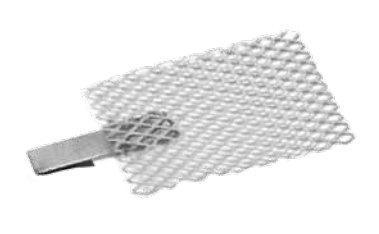
09 | EQUIPMENT & CONSUMABLES



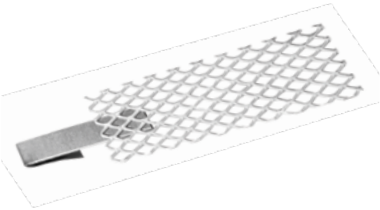


CU ANODE,
100mm x 50mm
Code: 52/ZZANCUL

NICKEL ANODE,
100mm x 50mm
Code: 52/ZZANNIL



PLATINUM/TITANIUM ANODE,
60mm x 90mm
Code: 52/ZZANPTL



PLATINUM/TITANIUM ANODE,
30mm x 90mm
Code: 52/ZZANPTS

STAINLESS STEEL ANODE,
110mm x 60mm
Code: 52/ZZANSSL

MASKING PEN
Code: 52/ZZPLSTP

CABLE WITH WORKPIECE CLIP
Code: 52/ZZRDCLP

ELECTROLYTE CONTAINER
WITH LID
Code: 52/ZZRDDSH

CONTACT PLATE
Code: 52/ZZRDPLT

FIBRE ELECTRODES
(PKT 5)
Code: 52/ZZRDFLG

SPECIAL FIBRE ELECTRODES
(PKT 3)
Code: 52/ZZRDFSM

RHODINETTE PLATING PEN
Code: 52/ZZRDPEN

10 | TECHNICAL DATA

WILAPLAT 750 SI GOLD PLATING (Au 4gm/l), 1l

Code: 52/AU750SI

This solution is supplied in a 1 litre pack and does not require dilution.

Uses: These baths may be used for gold plating non-ferrous metals, as well as gold and silver alloys. These solutions are capable of plating heavier deposits than those of the gilding salts (GP1000 – GP7500, 1 – 10 microns) resulting in a more wear-resistant coating. Special preparation of the item is required if it is of high Chromium or stainless steel.

As this solution contains cyanide, care should be exercised during handling and use. The solution should only be used in a well-ventilated area.

A current poisons permit/licence is required for the purchase of this product.

OPERATING DATA	
Gold Content	4g/l
Temperature	20 - 30°C
Voltage	2.8 - 3.5 volts
Time	10 - 45 minutes
Current Density	1 - 2.5 A/dm^2
Anode	Platinised titanium
Tank	Glass or suitable plastic

OPERATING DATA	
Deposition Rate	22mg/minute
pH	3.5 - 4. Adjust as required using citric acid or caustic soda
Agitation	Required
Hardness	120 - 145Hv
Thickness	About 10 microns

AUROSTEEL BRIGHT GOLD PLATING (Au 4gm/l), 1l

Code: 52/AUBG1L

This solution is supplied in a 1 litre pack, diluted and ready for use.

Uses: These solutions may be used to produce a heavy hard gold deposit on items requiring improved wear-resistance and are then generally bright gold plated.

As this solution contains cyanide, care should be exercised during handling and use. The solution should only be used in a well-ventilated area.

A current poisons permit/licence is required for the purchase of this product.

OPERATING DATA	
Gold Content	4g/l
Temperature	20 - 30°C
Voltage	2.8 - 3.5 volts

OPERATING DATA	
Time	35 - 60 minutes
Anode	Platinised titanium
Tank	Glass or suitable plastic

AUROSTEEL HARD GOLD BASE PLATING (Au 4gm/l), 1l — Code: 52/AUBP1L

This solution is supplied in a 1 litre pack, diluted and ready for use.

Uses: These solutions may be used to produce a gold layer with high adhesion and hardness on dental type high chromium alloys (activation of these materials with activation solution prior to plating is required). These pre-plated items are then bright gold plated.

As this solution contains cyanide, care should be exercised during handling and use. The solution should only be used in a well-ventilated area.

A current poisons permit/licence is required for the purchase of this product.

OPERATING DATA	
Gold Content	1.5g/l
Temperature	18 - 22°C
Voltage	3.0 volts
Time	15 - 30 minutes

OPERATING DATA	
Anode	Platinised titanium
Tank	Glass or suitable plastic
pH	1.5
Agitation	Required

WILAPLAT GILDING SALT

(1000) FINE GOLD, 1l	Code: 52/GP1000	**(2010) PALE GOLD, 1l**	Code: 52/GP2010
(1055) YELLOW, 1l	Code: 52/GP1055	**(2015) YELLOW/PINK, 1l**	Code: 52/GP2015

These items are supplied as pre-packed salts and are to be added to 1 litre of distilled water.

Uses: These salts make up 1 litre of electrolytes for the colour/decorative gilding of jewellery items. The deposit is hard and generally about 0.1 to 0.2 microns thick and as such should not be used on items that require long term good wear-resistance. Where a more durable surface is required, a hard gold electrolyte should be used to produce a thicker deposit.

As these salts contain cyanide, care should be exercised during handling and use. The solution should only be used in a well-ventilated area.

A current poisons permit/licence is required for the purchase of this product.

OPERATING DATA	
Gold Content	1g/l
Temperature	50 - 60°C
Voltage	6 - 8 volts
Time	20 - 30 seconds
Current Density	5 - 8 A/dm^2

OPERATING DATA	
Anode	Stainless steel
Tank	Glass or suitable plastic
Agitation	Not required
Hardness	130 - 180Hv
Thickness	0.25 microns max

WILAPLAT BLACK RUTHENIUM PLATING (Ru 5gm/l), 1l

Code: 52/RUBL1L

This solution is supplied in a 1 litre pack, diluted and ready for use.

Uses: This solution is used to produce decorative black coatings on precious and non precious metal items. It is recommended that the article to be plated is pre-plated with Wilaplat AC3 so as to provide satisfactory adhesion.

As this solution is acidic, care should be exercised during handling and use.

OPERATING DATA	
Ruthenium Content	5g/l
Temperature	60 - 70°C
Voltage	1.8 - 2.6 volts
Time	5 - 20 minutes
Current Density	1 - 2 A/dm^2

OPERATING DATA	
Anode	Platinised titanium
Tank	Glass or suitable plastic
Agitation	Required
Hardness	ca 180Hv

WILAPLAT BLACK RHODIUM (Rh 2gm/l), 100ml

Code: 52/RHBL200

This solution is supplied as a concentrate suitable for dilution in distilled water to produce 1 litre of electrolytes.

Uses: This solution is used primarily to produce a decorative coating on white gold, yellow gold and silver or to give the item an antique appearance. Care should be exercised when using the solution to avoid contamination. It is recommended that the item to be plated is pre-plated using Wilaplat AC3 to improve the adhesion of this deposit.

As this solution is acidic, care should be exercised during handling and use.

OPERATING DATA	
Ruthenium Content	2g/l
Temperature	18 - 25°C
Voltage	1.8 - 4 volts
Time	1 - 7 minutes
Current Density	1 - 1.5 A/dm^2

OPERATING DATA	
Anode	Platinised titanium
Tank	Glass or suitable plastic
Agitation	Required
Hardness	About 350hv
Thickness	0.5 microns

WILAPLAT BLANCADUR TI WHITE RHODIUM (Rh 2gm/l), 100ml Code: 52/RHWH200

This solution is supplied as a concentrate suitable for dilution in distilled water to produce 1 litre of electrolytes.

Uses: This solution is used primarily to produce a brilliant pure white, hard and extremely wear-resistant decorative coating on white gold and silver and to enhance the appearance of the item, and in the case of silver, to avoid tarnishing. Care should be exercised when using the solution to avoid contamination as this will generally result in loss of brilliance of the deposit.

As this solution is acidic, care should be exercised during handling and use.

OPERATING DATA	
Ruthenium Content	2g/l
Temperature	18 - 25°C
Voltage	1.8 - 4 volts
Time	1 - 7 minutes
Current Density	1 - 1.5 A/dm^2

OPERATING DATA	
Anode	Platinised titanium
Tank	Glass or suitable plastic
Agitation	Required
Hardness	About 350hv
Thickness	0.5 microns

WILAPLAT BRIGHT SILVER PLATING (Ag 30gm/l), 1l Code: 52/AGBP1L

This solution is supplied in a 1 litre pack, diluted and ready for use.

Uses: This solution may be used primarily to produce bright thick deposits that are crack and stress free.

N.B. The rectifier should be switched on prior to the immersion of the item to avoid a non-adhesive layer.

As this solution contains cyanide, care should be exercised during handling and use. The solution should only be used in a well-ventilated area.

A current poisons permit/licence is required for the purchase of this product.

OPERATING DATA	
Temperature	20 - 30°C
Voltage	0.5 - 1.2 volts
Time	5 - 50 minutes
Current Density	1 - 1.5 A/dm^2

OPERATING DATA	
Anode	Fine silver
Tank	Glass or suitable plastic
Hardness	ca 110Hv

ARCUPLAT SILVER PLATING (Ag 30gm/l), 1l

Code: 52/AGPL1L

This solution is supplied in a 1 litre pack, diluted and ready for use.

Uses: This solution is used primarily to produce thick deposits on dental impression materials that are characterized by extreme hardness and seating precision.

The sections to be coated on the conventional impression materials must first be rendered conductive with silver powder or silver paint.

N.B. The rectifier should be switched on prior to the immersion of the item to avoid a non-adhesive layer. Do not mix a new bath with used solution. For prolonged standing times, remove anodes from bath and rinse with distilled water.

As this solution contains cyanide, care should be exercised during handling and use. The solution should only be used in a well-ventilated area.

A current poisons permit/licence is required for the purchase of this product.

OPERATING DATA	
Silver Content	30g/l
Temperature	18 - 22°C
Time	3 - 4 hours
Current Density	20 - 25 mA

OPERATING DATA	
Anode	Fine silver
Tank	Glass or suitable plastic
pH	Greater than 10
Agitation	Required

WILAPLAT ZFM CLEANING SALTS

1kg Code: 52/SZFM10L | **1l** Code: 52/SZFM1L

These cleaning salts are supplied in packs to make 1 litre or 10 litres of cleaning solution.

Uses: This solution is used to electrolytically clean articles prior to plating. The item to be cleaned is first rinsed in an ultrasonic bath, then it is made the cathode in the electroplating unit, and finally the current is applied for the requisite time. When the article is removed from the bath, it should be thoroughly rinsed in clean water. If examined at this stage, there should be an unbroken film of water on the surface; should the film be broken it indicates the article is still dirty and needs further cleaning. When the article is clean and thoroughly rinsed in clean water it may then be plated, taking care not to touch it with bare hands.

With the operation of this solution, it requires the article to be the cathode.

This solution is alkaline and care should be exercised during handling and use.

OPERATING DATA	
Temperature	15 - 30°C
Voltage	6 - 8 volts
Time	30 - 180 seconds

OPERATING DATA	
Current Density	5 - 15 A/dm^2
Anode	Stainless steel
Tank	Glass or suitable plastic

WILAPLAT PURO-S ULTRASONIC CLEANING SALTS, 1kg

Code: 52/ULPUR1K

This product is supplied as 1kg salts to be made into a solution.

Uses: This product was developed for the rapid cleaning of precious and non precious metals. The solution is used in an ultrasonic tank to clean grease, dirt, etc. from metallic components. Care should be taken when cleaning some gemstones to ensure that they are compatible.

If the article is to be electroplated, then it should be thoroughly rinsed in clean water and then electrolytically cleaned to ensure the surface is chemically clean.

This solution is highly alkaline and care should be exercised during handling and use.

OPERATING DATA	
Content	50 - 60g/l
Temperature	50 - 80°C

OPERATING DATA	
Time	1 - 10 minutes (non-ferrous max 1 -2 minutes)
Tank	Preferably stainless steel

NICKEL PRE-PLATING BATH, 1l

Code: 52/PREN1

This solution is supplied in a 1 litre pack, diluted and ready for use.

Uses: This product is used for depositing thin, extremely adhesive nickel layers particularly on steel. With this bath, the activation stage in most cases can be eliminated.

Immediately after the adhesion layer nickel plating is completed, bright nickel plating can begin without any need for intermediary rinsing. As a precondition, the surface must be degreased.

OPERATING DATA	
Temperature	25 - 50°C
Voltage	1 - 3 volts
Time	2 - 5 minutes
Anode	Nickel

OPERATING DATA	
Tank	Porcelain or suitable plastic
pH	Less than 1, if required adjust with hydrochloric acid
Agitation	Required

NICKEL PLATING BATH, 1l

Code: 52/NIRH1

This solution is supplied in a 1 litre pack, diluted and ready for use.

Uses: Good dispersion and surface smoothing efficiency are the characteristic features of this bath. Being able to apply the process at room temperature is also an advantage.

This product is for use in a conventional electroplating unit such as the WILAPLAT system. After nickel pre-plating (adhesion layer), bright nickel plating can begin immediately without any need for intermediary rinsing.

OPERATING DATA	
Temperature	18 - 30°C
Voltage	1.8 - 4 volts
Time	2 - 5 minutes
Anode	Pure nickel

OPERATING DATA	
Tank	Porcelain or suitable plastic
pH	3.5 - 4.0, if required adjust with sulphuric acid
Agitation	Required

CYANIDE FREE GOLD POLISHING BATH, 1l

Code: 52/AUCF90

This product is supplied as a pack of salts to make 1 litre of solution.

Uses: This product is used to aid in the polishing of yellow gold alloys. The solution removes a layer of metal, which aids in clean up of your work. Great for more detailed work and reducing work time in cleaning hard to reach areas.

OPERATING DATA	
Temperature	50 - 60°C
Voltage	3 - 7 volts
Time	60 - 180 seconds (depending on material and surface)

OPERATING DATA	
Cathodes	Stainless steel
Tank	Glass or suitable plastic
pH	Approximately 2.5
Agitation	Required

ELECTROLYTIC SILVER POLISHING BATH (ARGOPOL), 1l

Code: 52/ARGOPOL

This product is supplied as a pack of salts to make 1 litre of solution.

Uses: This product is used to aid in the polishing of silver alloys. The solution removes a layer of metal, which aids in clean up of your work. Great for more detailed work and reducing work time in cleaning hard to reach areas.

As this solution contains cyanide, care should be exercised during handling and use. The solution should only be used in a well-ventilated area.

A current poisons permit/licence is required for the purchase of this product.

OPERATING DATA	
Temperature	30 - 70°C
Voltage	8 - 25 volts
Time	Impulses approximately 2 sec (depending on material and degree of soiling)

OPERATING DATA	
Cathodes	Stainless steel
Tank	Suitable plastic
pH	Approximately 12
Agitation	Required for large loads

RHODINETTE BLACK RHODIUM (Rh 2gm), 100ml

Code: 52/RDBL100

This solution is supplied in a 100 millilitre pack and requires no dilution.

Uses: The solution is used to produce decorative black coatings on precious metal jewellery items. The deposit is not particularly hard and is better suited to highlighting recesses. Thorough cleaning and degreasing of the item is necessary for satisfactory results.

As this solution is acidic, care should be exercised during handling and use.

OPERATING DATA	
Rhodium Content	2g
Temperature	20 - 30°C (room temperature)
Voltage	9 - 10 volts (minimum commensurate with deposition)

OPERATING INSTRUCTIONS
To avoid contamination of the solution, pour a small quantity into a glass container and dip pen into this. Any remaining solution should be left in this container or discarded.
Do not return any unused solution to the bottle.
Ensure article to be plated is chemically clean.
Better results may be achieved by plating the article with Novapal prior to the black rhodium.

RHODINETTE WHITE RHODIUM (Rh 2gm), 100ml

Code: 52/RDWH100

This solution is made specifically for use with the Rhodinette Pen Plating Unit (52/ZZRDCPT) and requires no dilution.

Uses: This solution is used primarily to produce a decorative coating on precious metal jewellery items and for repair or restoration. It is essential that the component to be plated is thoroughly cleaned and degreased so as to produce a satisfactory end result.

As this solution is acidic, care should be exercised during handling and use.

OPERATING DATA	
Rhodium Content	2g
Temperature	20 - 30°C (room temperature)
Voltage	9 - 10 volts (minimum commensurate with deposition)

OPERATING INSTRUCTIONS
To avoid contamination of the solution, pour a small quantity into a glass container and dip pen into this. Any remaining solution should be left in this container or discarded.
Do not return any unused solution to the bottle.
Ensure article to be plated is chemically clean.

RHODINETTE FINE GOLD ELECTROLYTE (Au 2gm), 100ml

Code: 52/RDFG100

This solution is supplied in a 100 millilitre pack and requires no dilution.

Uses: The solution is used to provide a decorative gold coating on precious metal jewellery items and for repair or restoration. It is essential that the component to be plated is thoroughly cleaned and degreased so as to produce a satisfactory end result.

As this solution contains cyanide, care should be exercised during handling and use. The solution should only be used in a well-ventilated area.

A current poisons permit/licence is required for the purchase of this product.

OPERATING DATA	
Gold Content	2g
Temperature	20 - 30°C (room temperature)
Voltage	4 - 10 volts (minimum commensurate with deposition)

OPERATING INSTRUCTIONS
To avoid contamination of the solution, pour a small quantity into a glass container and dip pen into this. Any remaining solution should be left in this container or discarded.
Do not return any unused solution to the bottle.
Ensure article to be plated is chemically clean.

RHODINETTE RED-GOLD BATH (Au 2gm), 100ml

Code: 52/RDRG100

This solution is made specifically for use with the Rhodinette Pen Plating Unit (52/ZZRDCPT) and requires no dilution.

Uses: This solution is used primarily to produce a decorative coating on precious metal jewellery items and for repair or restoration. It is essential that the component to be plated is thoroughly cleaned and degreased so as to produce a satisfactory end result.

As this solution contains cyanide, care should be exercised during handling and use. The solution should only be used in a well-ventilated area.

A current poisons permit/licence is required for the purchase of this product.

OPERATING DATA	
Rhodium Content	2g
Temperature	20 - 30°C (room temperature)
Voltage	2 - 8 volts (minimum commensurate with deposition)

OPERATING INSTRUCTIONS
To avoid contamination of the solution, pour a small quantity into a glass container and dip pen into this. Any remaining solution should be left in this container or discarded.
Do not return any unused solution to the bottle.
Ensure article to be plated is chemically clean.

RHODINETTE SILVER BATH 100ML (Ag 3gm), 100ml

Code: 52/RDFS100

This solution is made specifically for use with the Rhodinette Pen Plating Unit (52/ZZRDCPT) and requires no dilution.

Uses: This solution is used primarily to produce a decorative coating on precious metal jewellery items and for repair and restoration. It is essential that the component to be plated is thoroughly cleaned and degreased so as to produce a satisfactory end result.

As this solution contains cyanide, care should be exercised during handling and use. The solution should only be used in a well-ventilated area.

A current poisons permit/licence is required for the purchase of this product.

OPERATING DATA	
Silver Content	3g
Temperature	20 - 30°C (room temperature)
Voltage	1 - 3 volts (minimum commensurate with deposition)

OPERATING INSTRUCTIONS
To avoid contamination of the solution, pour a small quantity into a glass container and dip pen into this. Any remaining solution should be left in this container or discarded.
Do not return any unused solution to the bottle.
Ensure article to be plated is chemically clean.

RHODINETTE YELLOW-GOLD BATH (Au 2gm), 100ml

Code: 52/RDYG100

This solution is made specifically for use with the Rhodinette Pen Plating Unit (52/ZZRDCPT) and requires no dilution.

Uses: This solution is used primarily to produce a decorative coating on precious metal jewellery items to enhance the appearance of the item. It is essential that the component to be plated is thoroughly cleaned and degreased so as to produce a satisfactory end result.

As this solution contains cyanide, care should be exercised during handling and use. The solution should only be used in a well-ventilated area.

A current poisons permit/licence is required for the purchase of this product.

OPERATING DATA	
Silver Content	2g
Temperature	20 - 30°C (room temperature)
Voltage	4 - 10 volts (minimum commensurate with deposition)

OPERATING INSTRUCTIONS
To avoid contamination of the solution, pour a small quantity into a glass container and dip pen into this. Any remaining solution should be left in this container or discarded.
Do not return any unused solution to the bottle.
Ensure article to be plated is chemically clean.

RHODINETTE COMPLETE UNIT

Code: 52/ZZRDCPT

This fibre electrode plating system offers higher performance for "hard to get to" areas and quick repairs.

Uses: Selective electroplating of delicate areas and larger surfaces for goldsmiths and industrial applications. Bright and black rhodium, various shades of gold, silver, pure palladium and nickel palladium are available.

Features:

- Robust recitifier with automatic mains voltage adjustment, voltage-stabilised and double insulated
- Rotary knob for easy adjustment
- High-quality electrode pen in functional design with large platinum contact for best metal deposition
- Long-life electrodes in special fibre, available in two sizes
- Special masking pen available for producing exact contours

OPERATING DATA	
Footprint	Approximately 360mm x 200mm
Power supply	100 - 240 volts, 50 - 60 Hz, 25 VA
Weight	0.7kg

SUPPLIED AS STANDARD	
• Rhodinette 2 rectifier	• 1 cable with workpiece clip
• 1 pen with platinum contact	• 1 electrical adaptor
• 1 glass electrolyte container	• 1 pack of 5 replacement fibre tips

11 FREQUENTLY ASKED QUESTIONS

Q. Why has the plated deposit wiped off?
A. The item was not thoroughly cleaned before plating.

Q. Why is the colour of my red-gold yellow?
A. The electrolyte was at the wrong temperature.

Q. Why is the rhodium plate dark?
A. The voltage is too high or the solution has been contaminated.

Q. Why is the plated deposit rough or furry?
A. The voltage is too high (rate of deposition too high).

Q. Why is nothing happening?
A. The rectifier has no power, is not switched on or requires a fuse.

Q. Why is the item only plated on one side?
A. You haven't moved the item in the solution. Movement is essential in most electroplating procedures.

Q. Can I replate Rhodium?
A. No. Rhodium must first be repolished.

Q. Should I keep my electroplating solutions covered when not in use?
A. Good housekeeping is essential so yes, keep them covered.

Q. What precautions should I take with electroplating solutions?
A. It is vital that you follow all procedures and safety instructions. Refer to our Technical Data section starting from page 26.

Q. What should I do with spent plating solutions?
A. Talk to Palloys about refining your disposal by calling 1300 886 108 or emailing wieland@palloys.com.au.

Q. Can I electroplate stainless steel?
A. Yes, providing you activate the surface.

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