

# TOOLS DIRECT

Living Made Easy

## PRODUCT SELECTION GUIDE

- LEAD FREE BARS
- SOLDERING FLUXES

WAVE SOLDERING  
DIP SOLDERING  
HOT AIR LEVELLING

- LEAD FREE WIRE

MANUAL/AUTO SOLDERING

- ANODES

ELECTRO PLATING

- LEAD FREE PASTE

SMT

- PRE-FORM

ELECTRONIC ASSEMBLY

[WWW.TOOLSDIRECT.IN](http://WWW.TOOLSDIRECT.IN)



## About Us

# Tools Direct is an authorized **top quality tools supplier & exporter** based out of India.

We serve as an E-commerce portal for shopping industrial tools and supplies, which spreads across the Middle East and India under the group name 'APEX TOOLS'. We cater to both B2S as well as B2C sectors across the two countries. Currently we are operational in UAE, Qatar, Saudi Arabia and India with exclusive 'Sourcing and Distribution' centers in the UK and USA.

[www.toolsdirect.in](http://www.toolsdirect.in)



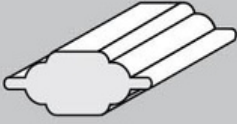
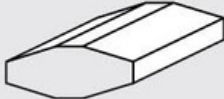

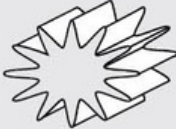


# ANODE SELECTION GUIDE

- Anode Purity**

Alloy Code	Purity	Melting Point (°C)	Remarks
LF- 361A	Sn 99.9%	232	Lead (Pb) Max.0.050% (Pb) Max.0.050%
LF- 362A	Sn 99.99%	232	Lead (Pb) Max.0.005% (Pb) Max.0.005%

- Available shapes & dimensions**

Description		Features
Shape	3D Profile	
<b>BALL</b> 10mm, 15mm 19mm, 25mm		The Ball & button anodes allows for more contact area to bring about greater current efficiency & a more uniform electrical current distribution throughout the plating basket. Better & more uniform deposition of tin on the printed circuit board.
<b>BUTTON</b> 15mm, 18mm, 19mm, 25mm		
<b>HEXAGONAL</b> 10 points, 14 points		Electroloy's anodes are process from virgin metal with high purity to ensure low sludging, greater plating process efficiency, less maintenance & lower energy consumption.  Electroloy employ the extruded method to create a product of dense, fine & smaller metal crystals packed into a much tighter crystalline structure.  Result in a better uniform dissolving of the anode & a more even distribution of metallic ions in the plating bath.
<b>OCTAGONAL</b> 75mm x 36mm		
<b>RECTANGULAR</b> 100mm x 14mm		
<b>STAR</b> 12 points		

- We also provide anodes of various alloy types for other industries in the Tin plating, printed circuit board, semi- conductors & chrome plating.**



# SOLDER PASTE SELECTION GUIDE

## • Lead Free Low Temperature Alloy

Alloy Code	Alloy Composition	Melting Range	Attributes	Application
LF-302	Sn42/Bi58	138°C	Reasonable shear strength & fatigue properties.	For soldering temperature sensitive component and LEDs. For step soldering & use in fusible links likes fuses, sprinkler heads and blow out valves.
LF-329	Sn42/Bi57/Ag1	139°C	Addition of silver improves its mechanical properties and good thermal fatigue performance.	
LF-323	Sn64/Bi35/Ag1	170-190°C	Addition of silver improves its mechanical properties and good thermal fatigue performance.	

## • Lead Free Mid-Range Temperature Alloy

Alloy Code	Alloy Composition	Melting Range	Attributes	Application
LF-307	Sn96.5/Ag3.0/ Cu0.5	217-219°C	Good mechanical & thermal fatigue properties.	Standard SAC alloy for most SMT application
LF-315	Sn99/Ag0.3/ Cu0.7	216-228°C	Good mechanical & thermal fatigue properties.	Cost effective SAC alloy for most SMT application
Sn100C*	Sn99.3/Cu0.6/ Ni+Ge	227°C	Good mechanical strength with bright, smooth joints. Better performance for through hole application.	SnCu alloy alternative to SAC alloy for most SMT application

## • FCT Asia is in license agreement with Nihon Superior for SNI00C



- Electroloy's solder pastes were manufactured under strict process & controlled environment, resulting in very consistent & quality solder paste.
- Our solder paste comes in low – mid temperature range in different flux type & particle size.
- We provide good technical support in your use of Electroloy's solder paste.

# SOLDER PASTE SELECTION GUIDE

## • Paste flux type

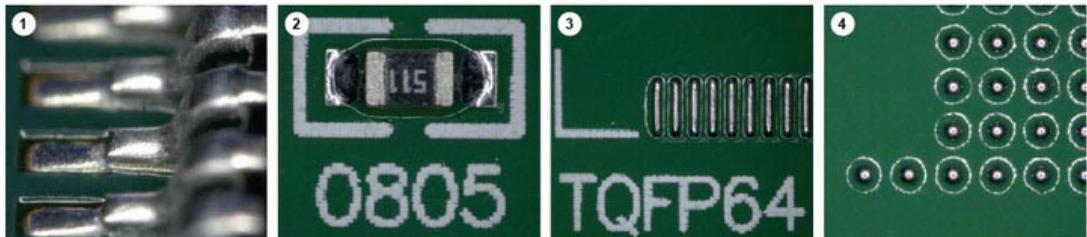
Flux code	FEATURE	FLUX CLASSIFICATION
EM#502 (HF)	A halogen free formulation with high shear resistant properties, allowing excellent printing capability. It is also designed for high speed printing operation. This flux system can withstand high preheat temperature leaving a clear residue as well as delivers excellent wetting on most board finishes.	ROLO
EM#503 (HF)	A halogen free formulation with high shear resistant properties, allowing excellent printing capability. It has excellent slump resistance & good tack performance. This flux system can withstand high preheat temperature leaving a clear residue as well as delivers excellent wetting on most board finishes.	ROLO
EM#515 (NC)	A specially formulated flux system with excellent printing capability which is suitable for ultra-fine pitch soldering operation. This flux system can withstand high preheat temperature, thus providing a wide reflow process window. It delivers excellent wetting on most board finishes.	ROL1
EM#233 (NC)	A specially formulated flux system with enhanced activity for hard to solder boards & components. It has excellent slump resistance & good tack performance. Its leaves behind a clear residue while delivering excellent wetting on most board finishes.	ROL1
EM#255 (NC)	A specially formulated flux system with enhanced activity for hard to solder boards & components. It delivers excellent wetting in most board finishes. It has excellent slump resistance & good tack performance. Its residue is soft non-stick & is pin testable. Its leaves behind a clear residue while delivering a long printer open time for better productivity.	ROL1
EM#265 (HF)	A halogen free formulation with wide process window and long printer open time. Soft non-stick residues improve reliability of in-circuit testing and reduce the frequency of test probes cleaning. It exhibit excellent slump resistance and excellent tack performance.	ROLO

\* Halogen free as per specification of standard IPC 4101B, IEC 61249-2-21 and JPCA- ES01

## • Solder Paste Type

No.	Alloy Code	Flux Type					
		EM#502	EM#503	EM#515	EM#233	EM#255	EM#265
1	LF307	•	•	•		•	•
2	LF315			•		•	•
3	SN100C					•	•
4	LF302	•	•	•	•		
5	LF323		•	•	•	•	•
6	LF329		•	•	•	•	•

- QFP Component QFP
- 0805 Component 0805
- QFP Pattern QFP
- BGA Pattern 2 BGA



# PREFORM SELECTION GUIDE

## • Lead Free Low Temperature Alloy

Product Type	High Lead Pb/Sn/Ag	Sn/Pb	Sn/Bi/Ag	Sn/Ag/Cu
Preforms	√	√	√	√
Solder Refills	√	√	-	√
Solder Sheets	√	√	√	√

## • Flux Types

Flux Type	IPC Classification	Flux %	Attributes of Flux coated Preform
PF-310-NC	ROL1	1-3	<ul style="list-style-type: none"> <li>• Eliminates external manual fluxing.</li> <li>• Reduce excessive flux residues.</li> <li>• Increases productivity.</li> <li>• Available in most sizes &amp; shapes.</li> </ul>
PF-710-HF	ROL0	1-3	

## • Solder Refills


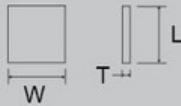


Preform Size	Preform Refill Size	Tape & Reel Size	Quantity per reel
0402	1.00 x 0.50 x 0.50 ±0.03	Ribbon 8mm Pitch 4mm Reel 7 / 13 inch	7" – 5000 13" – 25000
0603	1.52 x 0.80 x 0.80 ±0.03	Ribbon 8mm Pitch 4mm Reel 7 / 13 inch	7" – 4000 13" – 15000
0805	2.01 x 1.30 x 0.76 ±0.03	Ribbon 8mm Pitch 4mm Reel 7 / 13 inch	7" – 4000 13" – 15000
1206	3.56 x 1.52 x 0.77 ±0.03	Ribbon 12mm Pitch 4mm Reel 7 / 13 inch	7" – 4000 13" – 15000

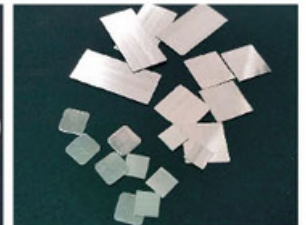
- Electroloy's solder refills are available in tape and reel packaging for easy use in high volume and automated manufacturing processes.
- It is fast placement by using standard equipment and suitable for increasing the solder volume in a solder joint.
- Our solder refills designed to reduce additional process to achieve desired results and compatible to all standard alloys in solder paste.



# PREFORM SELECTION GUIDE

## • Lead Free Low Temperature Alloy

Shape	Dimension	Minimum	Maximum	Diagram
<b>Sheets/Ribbons</b>	Width Thickness	10.00 ± 0.50 0.05 ± 0.03	25.0 ± 0.75 1.00 ± 0.15	
<b>Rectangular/ Square</b>	Width Thickness Length	1.00 ± 0.15 0.05 ± 0.03 1.00 ± 0.25	10.0 ± 0.15 1.50 ± 0.15 20.0 ± 0.30	
<b>Washer</b>	Outer Dia. Inner Dia. Thickness	1.00 ± 0.05 0.50 ± 0.05 0.05 ± 0.03	20.0 ± 0.20 10.0 ± 0.20 1.50 ± 0.15	
<b>Disc</b>	Outer Dia. Thickness	1.00 ± 0.05 0.05 ± 0.03	20.0 ± 0.20 1.50 ± 0.15	



- Electroloy's solder preforms are used in a wide range of industries such as computer, automotive, semi-conductors, consumer electronics and components manufacturing.
- We offer a variety of solder preforms that comes in many shapes & sizes to suit many applications such as rectangle, squares, discs, washers and pellets.
- Our preforms are extruded, rolled, stamped or compacted to meet up with high tolerances to ensure volume accuracy as well as meet up with customer specifications.

# LEAD FREE ALLOY SELECTION GUIDE FOR BAR/WIRE

## Low Temperature Alloy

Alloy Code	Alloy Composition	Melting Range	Attributes	Application
LF-302	Sn42/Bi58	138°C	Reasonable shear strength & fatigue properties.	For soldering temperature sensitive component and LEDs. For Step soldering & use in fusible links likes fuses, sprinkler heads and blow out valves.
LF-329	Sn42/Bi57/Ag1	139°C	Addition of silver improves its mechanical properties and good thermal fatigue performance.	
LF-323	Sn64/Bi35/Ag1	170-190°C	Good mechanical properties and thermal fatigue performance.	

## Mid-Range Temperature Alloy

LF-303*	Sn99.3/Cu0.7	227°C	Good mechanical & thermal fatigue properties with good electrical conductivity.	For dip soldering & low cost for wave soldering.
LF-305	Sn96.5/Ag3.5	221°C	Excellent joint strength & good thermal fatigue resistance.	Use at BGA/CSP components & die attachment in high power devices.
LF-307*	Sn96.5/Ag3.0/Cu0.5	217-219°C	Good mechanical & thermal fatigue properties.	For dipping & wave soldering
LF-315 *	Sn99/Ag0.3/Cu0.7	216-228°C	Good mechanical & thermal fatigue properties.	Cost effective SAC for general dip & wave soldering.
LF-315X*	Sn99/Ag0.3/Cu0.7+Bi	216-228°C		
Sn100C**	Sn99.3/Cu0.6/Ni+Ge	227°C	Good mechanical strength with bright, smooth joints. Better performance for through hole application.	For dipping & wave soldering
Sn100CL**	Sn99.3/Cu0.6/Ni+Ge	227°C		For HASL soldering

- HD Alloy is available for high temperature dipping for wire thinning process

## High Temperature Alloy

LF-331	Sn95/Sb5.0	235-240°C	Good resistance to thermal fatigue & good shear strength.	For high temperature soldering in air con, refrigeration, plumbing joint & radiator repair.
LF-333	Sn97/Cu3.0	227-300°C	Higher creep & shear strength. Better thermal resistance than normal tin.	For high temperature soldering in wire dipping, radiator repair & plumbing joint.



- The above lead free bar selection is among the most commonly used alloy for the electronic industries.
- At Electroloy, we are capable to offer custom alloy development for specific temperature requirements and for special applications. Or we can provide an alloy for your specific application that will meet your requirements.
- We also made the standard leaded bars 63/37 & others for the automotive industries.



# LEAD FREE ALLOY SELECTION GUIDE FOR BAR/WIRE

- **Code Flux Type**

Flux-Cored Type	Feature	Classification
EM#17 (WSF)	Water-soluble cored-flux for aqueous cleaning assembly process. Excellent "fast action" wetting property to enhance productivity.	ORH1
EM#23N (NC)	Halide free with lowest and clear flux residue suited for no-clean hand soldering assemblies. Exhibit fast wetting characteristics. Widely and most popular choice for assemblies requiring no-clean, clear residue characteristics. Suitable for use on different alloys.	ROL0
EM#26 (NC)	Lowest and clear flux residue suited for most commercial no-clean hand soldering assemblies. Widely and most popular choice for assemblies requiring no-clean, clear residue characteristics.	ROL1
EM#53 (NC)	Fast wetting action cored-flux for consumer electronics assemblies. Flux residue is neither corrosive nor conductive under normal condition of use. Cleaning not necessary for most consumer assemblies.	ROL1
EM#65 (NC)	Fast wetting action cored-flux for consumer electronics assemblies. Suitable for terminal soldering, exhibiting clean residue. Cleaning not necessary for most consumer assemblies.	ROH1
EM#75* (HF)	Halogen free with clear flux residue suited for no-clean soldering assemblies. Exhibit good wetting characteristics. Widely and most popular choice for assemblies requiring no-clean, clear residue characteristics.	ROL0
EM#79* (HF)	Total halogen free with clear flux residue suited for no-clean soldering assemblies. Exhibit good wetting characteristics. Widely and most popular choice for assemblies requiring no-clean, clear residue characteristics.	ROL0

- **Halogen free as per specification of standard IPC 4101B, IEC 61249-2-21 and JPCA-ES01**

- Electroloy offer a wide range of lead free wires with different cored flux types and flux % of range 2-6%. Suitable for manual and robotic soldering application. We also manufacture lead free wires of diameters up to 0.15mm to suit different types of soldering applications.
- At Electroloy, we can also customize alloy for your application for use in conventional hand soldering to auto robotic & plumbing application.



# FLUX SELECTION GUIDE

## • Water Soluble Fluxes

Product Code	Flux Type	Solid Content	SG @ 25°C	Class Type	Attributes
EM2021AHF-L*	Water Soluble Halogen Free Organic Flux	21%	0.875	ORH0	Water soluble halogen free organic flux, suitable for P dips and SMD Leads tinning. Effective for Cu alloys, Alloy 42 and Nickel substrate base material. Excellent wetting and lowest possible level of ionic contamination achievable.
EM2116-L	Water Soluble Flux	16%	0.875	ORH1	Neutral pH, excellent wetting, easily washable to low level of ionic contamination. Icicles & bridging free soldering possible.

## • No Clean Fluxes

Product Code	Flux Type	Solid Content	SG @ 25°C	Class Type	Attributes
EM3053R-L	Halide Free No Clean Flux	5.0%	0.800	ROL1	Halide free no clean flux consisting of modified rosin blended with a solvent system exhibiting excellent wetting power and clear residue. The modified rosin used is of extra high purity and free from conductive contaminants. Suitable for assemblies where a cosmetically cleaner post residue is required.
EM3155R-L	No Clean Flux	6.0%	0.802	ROL1	A halide formula with minimal rosin amount for modern machine soldering of electronic assemblies. Performs well with high density mounting chips and through hole components. Post residue is not tacky.
EM3115R-L	No Clean Flux	15.0%	0.823	ROL1	High rosin mildly activated flux consisting of pure rosin blended with a solvent system exhibiting excellent wetting power.

## • Halogen Free No Clean Fluxes

Product Code	Flux Type	Solid Content	SG @ 25°C	Class Type	Attributes
EM3040R-L*	Halogen Free No Clean Flux	4.0%	0.792	ROL0	Halogen free no clean flux consisting of modified rosin blended with a solvent system exhibiting excellent wetting power. The modified rosin used is of extra high purity and free from conductive contaminants. Suitable for assemblies where a cosmetically cleaner post residue is required.
EM3055R-L*	Halogen Free No Clean Flux	6.0%	0.800	ROL0	Halogen free no clean flux consisting of modified rosin blended with a solvent system exhibiting excellent wetting power. The modified rosin used is of extra high purity and free from conductive contaminants. Performs well with high density mounting chips and through hole components.

- Halogen Free as per specification of standard IPC 4101B, IEC 61249-2-21 & JPCA-ES 01

# FLUX SELECTION GUIDE

- Electroloy's fluxes are manufactured with strict control to give consistent fluxing activities.
- A wide range of fluxes are available with optimum activation level to meet specific application.
- Our No Clean Fluxes works well with Lead free soldering process of PCBs with high density mounting chips & discrete components.



## • Flex Pen

Product Code	Flux Type	Solid Content	Class Type	Tip Type	Attributes
EM2116-ML	Water Soluble Flux	16%	ORH1	Brush / Felt Knife/ Felt Flat	Neutral pH, excellent wetting, easily washable to low level of ionic contamination. Icicles & bridging free soldering possible.
EM53-ML	No Clean Flux	20%	ROL1	Brush / Felt Knife/ Felt Flat	High rosin mildly activated flux consisting of pure rosin blended with a solvent system exhibiting excellent wetting power.
EM23N-ML	Halide Free No Clean Flux	20%	ROL0	Brush / Felt Knife/ Felt Flat	Halide free no clean flux consisting of modified rosin blended with a solvent system exhibiting excellent wetting power and clear residue.





# GET GREAT DISCOUNTS!

[SHOP NOW](#)

## BECOME A B2B SELLER

[CONTACT US](#)

Order on WhatsApp  
+91 8593078990 

Call us now  
+91 95622 79990 

Email us at  
support@toolsdirect.in 

[FOLLOW US](#)

