

PRODUCT PROFILE

ELECTROLOY WATER SOLUBLE LEAD FREE WIRE

Product Name

#17 WATER SOLUBLE FLUX CORED SOLDER
-LEAD FREE ALLOY-Sn99.3/Cu0.7

Product Code

EM#17-303W

The information and statements herein are believed to be reliable but are not to be construed as a warranty or representation for which we assure legal responsibility. Users should undertake sufficient verification and testing to determine the suitability for their own particular purpose of any information or products referred to herein. No warranty of fitness for a particular purpose is made. Properties are typical and not to be used as specifications.

DOC CATEGORY: 3

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Solder Connections

. China . Malaysia . Singapore

PRODUCT DESCRIPTION

EM#17-303W lead free solder wire is a high activity water washable solder for repairing through-hole, mixed and surface mount assemblies. It is a water-soluble cored flux lead free solder wire with alloy composition Tin 99.3% and Copper 0.7%. This water-soluble cored flux wire is more effective comparing to rosin fluxes in soldering difficult-to-solder metals. EM#17-303W is formulated to provide high activity soldering, leaving an easily washable residue in plain water without the need for cleaning additives.

CHEMICAL COMPOSITION OF ALLOY

Quality of Electroloy's EM#17-303W lead free solder wire in terms of composition of alloy is controlled strictly under Electroloy's Lead Free Specification LF-303.

Elements		Specification (%wt/wt)
Tin	Sn	Remainder
Lead	Pb	Max 0.050
Aluminium	Al	Max 0.005
Antimony	Sb	Max 0.050
Arsenic	As	Max 0.030
Bismuth	Bi	Max 0.050
Copper	Cu	0.6 – 0.8
Iron	Fe	Max 0.010
Zinc	Zn	Max 0.003
Cadmium	Cd	Max 0.002
Silver	Ag	Max 0.050
Nickel	Ni	Max 0.010
Indium	In	Max 0.050
Gold	Au	Max 0.050

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CHEMICAL COMPOSITION OF FLUX

The standard flux content for this type of solder wire is 2.5 +/- 0.2%. However, other percentages of flux are available upon request. The range for the flux percentage is 2.2% – 3.3%.

FEATURES OF CORED FLUX

Flux Cored Type	Features	Cleaning Method
Water Soluble EM#17	High activity water washable cored-flux for repairing through-hole, mixed and surface mount assemblies. More effective comparing to rosin fluxes in soldering difficult-to-solder metals such as brass, nickel and severely oxidized copper.	Water clean

CHARACTERISTICS OF CORED FLUX EM#17

Physical Properties and Reliability Data	Specification	Test Method	Result (Typical)
Flux Type	-	-	Water Soluble
Class Type	Refer to J-STD-004	-	ORH1
Color/Appearance	-	-	Off-white
Odor	-	-	Sweet smell
Halide Content (%) (Chloride and Bromide)	Max 2.0 %	JIS Z 3197, Method 8.1.4.2.1	≤ 2.00 %
Corrosion Test	Major corrosion acceptable	J-STD-004, IPC-TM-650, Method 2.6.15	High
SIR,IPC(Typical) 85°C / 85% RH After 168 hours	Min $1 \times 10^8 \Omega$	J-STD-004, IPC-TM-650, Method 2.6.3.3	$\geq 1.0 \times 10^9 \Omega$ After Cleaning
Spreading (%)	-	JIS Z 3197, Method 8.3.1.1	≥85%

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PHYSICAL APPEARANCE

Electroloy's solder wire exhibits a shinning appearance and in grey uniform color. A wide range of diameter for the wire is available, 0.2– 2.4mm (+/-0.05mm) , 2.5mm – 3.5mm (+/-0.1mm) , 3.6mm – 4.5mm (+/-0.2mm) and $\geq 4.6\text{mm}$ (+/-0.3mm).

CLEANING

The flux residues must be removed as they can affect reliability of the joint if left uncleaned. The flux residues can be easily removed by plain water, deionized water is recommended for the final rinse to ensure removal of all undesirable residues.

APPLICATION

EM#17-303W is suitable for use in any commercial hand soldering application. EM#17-303W is ideal for difficult to solder metals such as brass, nickel and severely oxidized copper.

Solder iron tip temperature should be between 350 – 430°C. Hold the solder iron tip at a 45° to 60° angle with work surface. The solder iron should contact both the component lead and PCB pad surface.

PACKAGING

Each spool of solder wire is approximately 0.5kg or 1.0kg and shall be secured by paper and rolling tape. The solder wire shall be packed in carton boxes of about 10kg per box. Other special size and packaging requirement can be requested. The traceable information will be shown on the box such as vendor's name, alloy composition, net weight and lot number.

DELIVERY

Each shipment shall be accompanied with Certificate of Analysis for each lot, which indicates the amount of constituents and impurities.

STORAGE AND SHELF LIFE

Electroloy's EM#17-303W lead free solder wire has limited shelf life which is 6 months from the date of manufactured when handled properly. Dry and non-corrosive is needed for storage environment. To minimize the wires from further oxidation, ensure that the packaging is not damaged and the wires are not exposed to dust and other foreign materials.

HEALTH AND SAFETY

Refer to the MSDS for guidance on safety and health issues.

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