

Technical Bulletin

S/M-345-6

VACULOY[®] SMG[™] SOLDER

GENERAL DESCRIPTION

Vacuoly[®] SMG solder is alloyed in Alpha's proprietary Vacuoloy process utilizing materials of the lowest impurity levels available. This provides the basis for it to far exceed the requirements for solder set by J-STD-006 and previous military specification QQS-571F. In addition, Alpha's unique Vacuoloy process removes included oxides. Inspection of each lot of material by both chemical analysis and Dross Inclusion Tests guarantees consistency with regard to metallic and non-metallic impurities, including oxides.

FEATURES & BENEFITS

The proprietary Vacuoloy process used to produce Vacuoloy SMG Bar Solder is a highly effective method for removing included oxides from solder. This is extremely important because included oxides generate excessive drossing and increase the viscosity of the solder. Solder with higher viscosity can result in increased soldering defects (i.e. solder bridging). In addition, the extremely low oxide levels in Vacuoloy ensure strong, clean and well-formed solder joints.

The exceedingly low levels of metallic and non-metallic impurities associated with Vacuoloy SMG solder produces the highest quality solder joints while minimizing defect rates. This is due to the superior fluidity of the solder and the elimination of included oxides for greatly reduced drossing and improved wetting characteristics.

USES

Vacuoly SMG solder can be used in all applications where regular solder is used (i.e., wave soldering, drag soldering, solder leveling, lead tinning, etc), but is specially produced to meet the very stringent demands of Surface Mount soldering.

AVAILABILITY

Vacuoloy SMG is available in solder alloy Sn63/Pb37 in the following bar/wire sizes:

- 2.2lb (1kg) bar
- 4.4lb (2kg) bar
- 0.125 inch diameter solid wire for automatic feed systems

TECHNICAL SPECIFICATION

The following table indicates the Alloy and Impurity Specification limits for Vaculoy SMG solder alloy Sn63 in relation to J-STD-006 and QQS-571F.

Element	Vaculoy SMG	J-STD-006	QQS-571
Sn	62.8 - 63.5	62.5-63.5	62.5 - 63.5
Pb	Balance	Balance	Balance
Sb	≤.12	≤0.50	≤0.5
Cu	≤0.005	≤0.08	≤0.08
Au	≤0.005	≤0.05	≤0.08
Ag	≤0.003	≤0.10	≤0.10
Al	≤0.005	≤0.005	≤0.005
As	≤0.01	≤0.03	≤0.03
Bi	≤0.005	≤0.10	≤0.10
Cd	≤0.001	≤0.002	≤0.005
In	≤0.005	≤0.10	≤0.10
Fe	≤0.005	≤0.02	≤0.02
Ni	≤0.005	≤0.01	≤0.01
Zn	≤0.002	≤0.002	≤0.005
S	≤0.001	N/A	≤0.005
P	≤0.002	N/A	≤0.010
Oxides	*	N/A	N/A

* Passes Alpha Dross Inclusion Test

HEALTH & SAFETY

Please refer to the product MSDS for complete Health and Safety instructions.