	Department: Engineering department	Date: 2012-08-11
	Version: 2012-08-11	

1. Alloying component (comply with GB/T 8012-2000)

Item	Alloying component (weight %)			impurity (weight %) no more than								
	锡 Sn	铅 Pb	锑 Sb	铋 Bi	铁 Fe	砷 As	铜 Cu	锌 Zn	铝 Al	镉 Cd	银 Ag	Except Sb,Bi,Cu, others 0.08
60/40	59.5~ 60.5	other	0.12 ~0.5 0	0.05	0.012	0.015	0.04	0.001	0.00 1	0.00 1	0.015	

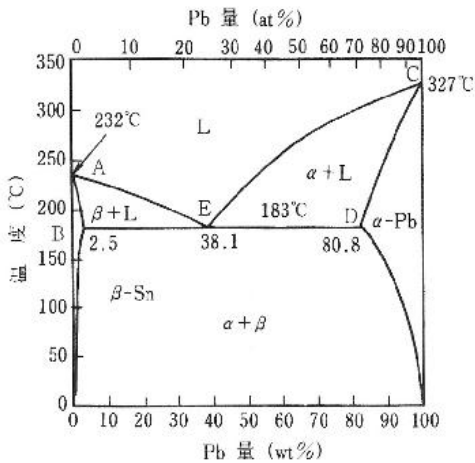
2. Size and tolerance

Diameter (mm)	Tolerance (mm)
≤0.3	±0.02
0.8~2.5	±0.03
>0.8~2.5	±0.05
>2.5~6.0	±0.10

3. Physical property

component		Melting point/°C		Solidifying point(°C)	Density g/cm ³	Resistivity uΩ.cm	Heat conductivity	solidity
Sn%	Pb%	liquidus	solidus					
60	40	190	190	0	8.50	14.13	-	10.5

4. Sn/Pb phase diagram



5. Chemical characteristic

Numb	Item	Testing standard	comply with standards
1	Solder (%)	Standard $\pm 0.1\%$	GB/T 3131-2001
2	Continuity of solder(%)	$< 1.5\%$	GB/T 3131-2001
3	halogen(wt%)	R: $< 0.05\%$; RMA: $0.05\% \sim 0.15\%$ RA: $> 0.15\%$	GB/T 9491-2002
4	Copper corrosion tests	No obvious corrosion	JIS Z 3197
5	Copper Mirror Corrosion	AA: no change A: no corrosion through copper film	JIS Z 3197
6	Insulation resistance (Ω)	R,RMA 一级 $\geq 1 \times 10^{12}$ 二级 $\geq 1 \times 10^{11}$ RA: 一级 $\geq 1 \times 10^{11}$ 二级 $\geq 1 \times 10^{10}$	GB/T 9491-2002
7	Water extraction resistance ($\Omega \cdot \text{cm}$)	R,RMA: $\geq 1 \times 10^5$ RA: $\geq 5 \times 10^4$	GB/T 9491-2002
8	rate of spread (%)	R: ≥ 75 , RMA ≥ 80 , RA: ≥ 90	GB/T9491-2002
9	dryness	No viscosity on the surface of slag, and easy to remove the powder.	IPC-TM-650
10	spatter loss coefficient (%)	outstand: $0 \sim 10\%$; medium: $11 \sim 30\%$; off-grade: $> 31\%$	IPC-TM-650
11	acid (mg KOH/g)	$> 162\text{mg(KOH)/g}$	GB/T 8146-2003

6. Information of product

Name of product	Solder wire	PN	Sn60Pb40
Type	Lead-bearing	Manufacturer	Yidiantong
Use	Used to weld the electronic components and electrical appliances		

6.1 Alloying component of solder

Element	CAS #	Percent wt%	TLV-TWA mg/m ³	TLV-STEL mg/m ³	OSHA PEL mg/m ³
1) Sn	7440-31-5	60	2.0	/	2.0
2) Pb	7439-92-1	40	0.05	/	0.05

PS: CAS: Chemical Abstracts cited

OSHA: occupation safety and Health Administration of American

PEL: Permissible exposure limit

TLV: Threshold Limit Value

TWA: Time-weighted average

STEL: Short term exposure limit

6.2 Chemical and physical property of solder

Physical	Solid silk	Smell	No
Density	8.50	Taste	No
Melting point	190°C	Color	Silvery white
Boiling point	No	V O C	No
Formula weight	No	Volatility	No
PH	No	Vapor density	No
Acid value	/	Vapour pressure	No
Critical temperature	/		