



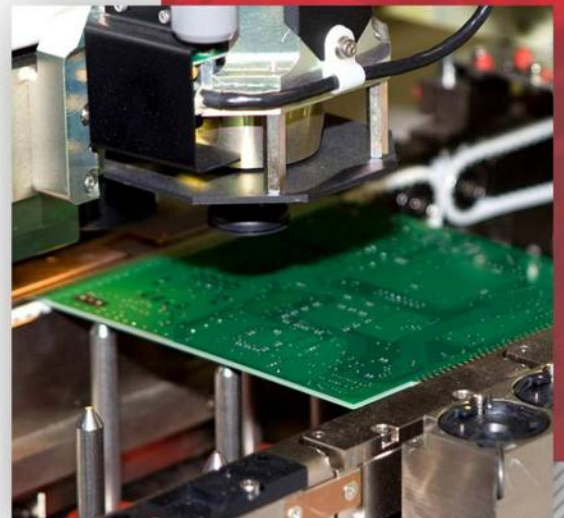
THE LEADER IN SOLDERING

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Singapore Asahi research, design and produce solder and chemical products offering value add interconnect material engineered solutions, distinctively reliable and cost value efficient.

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About Us: Milestones

Year Event

1977	Incorporation of Singapore Asahi Chemical & Solder Industries Pte. Ltd.
1983	Asahi Metals (HK) Ltd. established
1985	ISO 9003 – certification on Good Manufacturing Practice
1991	Sinasahi Solder (M) Sdn. Bhd. established
1992	ISO 9002 – certification on Manufacturing and Management Systems
1993	Beijing Asahi Chemical & Solder Co. Ltd. established Shenzhen Longhua Asahi Solder Co. Ltd. established
1995	Wuxi Asahi Solder Co. Ltd. established Developed super reflective solder alloy with high fluidity and low dross characteristics
1996	Innovation Development Award from EDB for development of lead-free solder products Developed TSF high thermal fatigue lead free solder
1997	PT Sinasahi Solder Indonesia established Quantum Chemical Technologies (S) Pte. Ltd. established Matsushita Electronics Best Performance Award
1998	PT Sanyo Best Vendor Award
1999	Global Advance Metal Technology Pte. Ltd. established
2000	Matsushita Electronics Best Supplier award
2001	Lead Free Viromet launched
2002	Singapore Top 500 SME award Full implementation of our lead free solder products at Matsushita Electronics (S) Pte. Ltd. Approvals by Electronics manufacturing companies Casio, Sony, Thomson, Toshiba Tech and etc. Asahi Metals (SZ) Ltd. established Asahi Technologies America Inc. established
2004	Asahi Solder Technology (Beijing) Co. Ltd. established Asahi Solder Technology (Wuxi) Co. Ltd. established Sony Green Partner certified lead free approval by Hitachi Communication Technologies Ltd. & Hitachi Medical Ltd. ISO 9001:2000 certified ISO 14001:1996 certified
2005	ISO 14001:2004 certified
2006	SCS and Viromet listed under IPC Joint Industry Standard
2007	Asahi Technologies (Thailand) Ltd. established
2013	Murata Electronics (Thailand) Ltd. – Quality Partner award
2014	Pepperl+Fuchs – Best Performance Award
2015	Upgrade manufacturing operations in Singapore
2017	Asahi (Tianjin) Solder Technology Co Ltd established
2017	Products for New Emerging Technologies
2018	ISO 9001:2015 & ISO 14001:2015 Certified



Certificate SG04/00464

The management system of

Singapore Asahi Chemical & Solder Industries Pte Ltd

47 Pandan Road
Singapore 609288

has been assessed and certified as meeting the requirements of

ISO 14001:2015

For the following activities

Manufacturer of Solder and Lead-free Solder, Solder Paste, Liquid Flux and Solvent

This certificate is valid from 23 July 2018 until 08 April 2019 and remains valid subject to satisfactory surveillance audits.

Re certification audit due before 22 March 2019
Issue 8. Certified since 09 April 2004



Authorised by

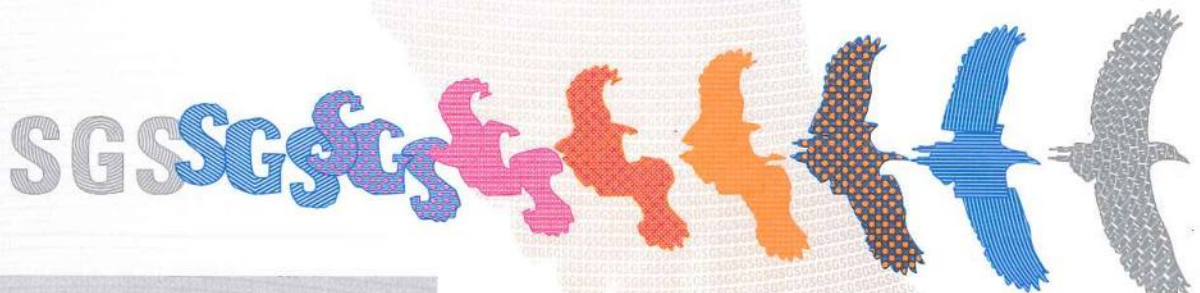
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Certificate SG04/00064.01

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47 Pandan Road
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Re certification audit due before 22 March 2019
Issue 8. Certified since 22 April 2004

Multiple certificates have been issued for this scope
The main certificate is numbered SG04/00064.00

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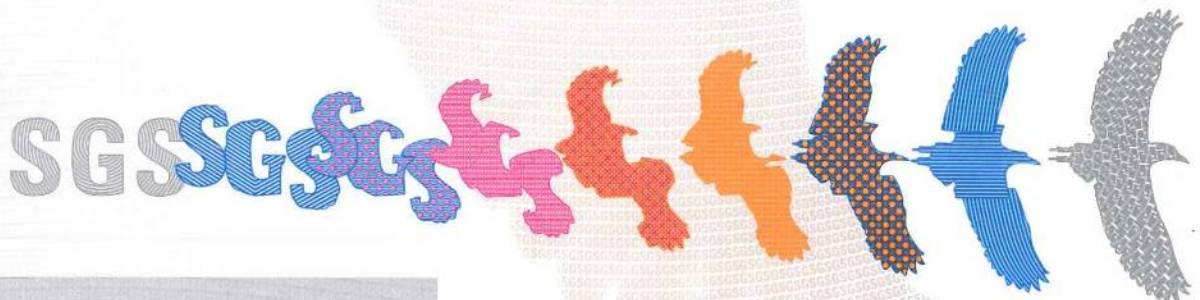
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Singapore Asahi Chemical & Solder Industries Pte Ltd

ASAHI PRODUCTS - Tacky Paste Flux

Product Name	Application	Assembly Type	Residue Type	Special features
BAF-708	Dispensing Printing Pin Transfer Dipping	Ball attach	No-Clean	ROLO Chemistry. High ball shear value.
BAF-717	Dispensing Printing Pin Transfer Dipping	Ball attach	No-Clean	ROLO Chemistry. High ball shear value.
BAF-726	Dispensing Printing Pin Transfer Dipping	CSP assembly and rework applications	No-Clean	ROLO Chemistry. High ball shear value.
BAF-780	Dispensing Printing Pin Transfer Dipping	Ball attach, bump chip assembly	Water Clean	ORMO Chemistry. High ball shear value.



Singapore Asahi Chemical & Solder Industries Pte Ltd

ASAHI PRODUCTS - Die Attach Paste

Product Name	Alloy	Application	Assembly Type	Residue Type	Special features
P925 3- ADAF912-E	P925	Dispensing	Die-Attach Leadframe-Attach	Solvent-clean	Discrete power package assembly in forming gas (N ₂ H ₂)
SM950-M305-D-885	SAC305s	Printing	IGBT base plate	No-clean (Ultra-Low Residue)	IGBT base plate assembly in vacuum oven under nitrogen (N ₂)
AWS980-M305-D-885	SAC305s	Printing	SiP	Water Clean	SiP assembly in vacuum oven under nitrogen (N ₂)

	Formulation	ANX3012	ANX3133	SF56	SF60	SF105
Properties	Flux Type	No-Clean	No-Clean	No-Clean	No-Clean	No-Clean
	Solid Content (wt%) JIS Z 3197 8.1.3	1.60 ± 0.2	1.60 ± 0.2	1.35 ± 0.2	1.40 ± 0.2	1.7 ± 0.3
	Specific Gravity JIS Z 3197 8.2.2	0.790 ± 0.005	0.790 ± 0.005	0.790 ± 0.005	0.792 ± 0.005	0.791 ± 0.005
	Acid Value (mg KOH/g flux) JIS Z 3197 8.1.4.1	12.0 ± 2.0	12.0 ± 2.0	14.0 ± 2.0	14.0 ± 2.0	14.0 ± 2.0
	Copper Corrosion Test JIS Z 3197 8.4.1	Passed	Passed	Passed	Passed	Passed
	Copper Mirror Test JIS Z 3197 8.4.2	Classified as "M"	Classified as "M"	Classified as "M"	Classified as "L"	Classified as "M"
	Water Extract Resistivity JIS Z 3197 8.1.1	>1 x 10 ⁴ Ω-cm	>1 x 10 ⁴ Ω-cm	>1 x 10 ⁴ Ω-cm	>1 x 10 ⁴ Ω-cm	>1 x 10 ⁴ Ω-cm
	SIR (85°C, 85%RH, 168hrs) IPC-TM-650 2.6.3.3	>1 x 10 ⁸ Ω	>1 x 10 ⁸ Ω	>1 x 10 ⁸ Ω	>1 x 10 ⁸ Ω	>1 x 10 ⁸ Ω
	ECM (85°C, 88.5%RH, 596hrs) IPC-TM-650 2.6.14.1	>1 x 10 ⁸ Ω No Dentricle Growth	>1 x 10 ⁸ Ω No Dentricle Growth	>1 x 10 ⁸ Ω No Dentricle Growth	>1 x 10 ⁸ Ω No Dentricle Growth	>1 x 10 ⁸ Ω No Dentricle Growth
	Residue Dryness Test JIS Z 3197 8.5.1	Passed	Passed	Passed	Passed	Passed
Residue Removal	Not Required	Not Required	Not Required	Not Required	Not Required	
Alloy Compatibility (Tab Ribbon)	SnPb	✓	✓	✓	✓	✓
	Lead Free	✓	✓	✓	✓	✓
Fluxing Method	Soaking	✓	✓	✓	✓	✓
	Dipping	✓	✓	✓	✓	✓
	Spraying	✓	✓	✓	✓	✓

		Dipping	No-Clean						Water Soluble			VOC Free
Formula		FL6000	QF2018M	QF2036	FL2002T	QF2055	FL2012M2	QF3115A	T5A	T3018	WF6033	WBF4008
Product Features		Incorporated with organic activators for improved solderability by reducing the surface tension of the solder during the tinning process.	Specially designed to give a clear residue with superior wetting on difficult to solder substrates.	Flux residue is clear and non sticky. Minimizes micro-solderballs during conventional and lead free PCB assemblies.	Formulated for both leaded and lead free application. It reduces solder bridging problems with no solder balls formed.	Halogen free flux which minimizes micro-solderballs during conventional and lead free PCB assemblies.	Excellent solderability with a Matte finish. Reduces bridging in connectors and QFPs.	One of our first generation flux for both Conventional and lead free soldering. No solder ball formation and minimum bridging issues.	A fumeless and non-flammable aqueous solution to restore the solderability of tarnished copper surface for hot solder dipping process.	A halide free, alcohol based flux for dipping applications on component leads made of Nickel-Iron (Alloy 42), Nickel and Copper.	Highly active flux designed for wave soldering operations. Excellent capillary effect on plated-through-hole PCBs.	A VOC free / water-based, no-clean flux designed for mass production in leaded and lead-free application.
	Flux Type	Low-Solid, No-Clean	Low Solid, Halie-Free, No-Clean	Low Solid, Halie-Free, No-Clean	No-Clean	Halogen-Free, No-Clean	No-Clean	No-Clean	Water Soluble	Water Soluble	Water Soluble	VOC Free / Water-Based
Properties	Solid Content (%) JIS Z 3197 8.1.3	2.0 ± 0.5	2.2 ± 0.2	3.6 ± 0.2	7.0 ± 0.5	5.3 ± 0.5	10.0 ± 0.5	15.0 ± 0.5	2.1 ± 0.3	10.6 ± 0.5	20.5 ± 1.0	3.0 ± 0.5
	Specific Gravity JIS Z 3197 8.2.2	0.823 ± 0.005	0.788 ± 0.005	0.792 ± 0.005	0.811 ± 0.005	0.797 ± 0.005	0.813 ± 0.005	0.823 ± 0.005	1.02 ± 0.005	0.879 ± 0.005	0.86 ± 0.005	1.008 ± 0.005
	Halide Content (wt%) JIS Z 3197 8.1.4.2.1	0.08 ± 0.01	Not Added	< 0.01	0.09 ± 0.01	Not Added	0.08 ± 0.01	0.08 ± 0.01	1.90 ± 0.1	Not Added	2.0 ± 0.03	Not Added
	SIR (85°C, 85%RH, 168hrs) IPC-TM-650 2.6.3.3	>1 x 10 ⁸ Ω	>1 x 10 ⁸ Ω	>1 x 10 ⁸ Ω	>1 x 10 ⁸ Ω	>1 x 10 ⁸ Ω	>1 x 10 ⁸ Ω	>1 x 10 ⁸ Ω	>1 x 10 ⁸ Ω	>1 x 10 ⁸ Ω	>1 x 10 ⁸ Ω	>1 x 10 ⁸ Ω
	ECM (85°C, 88.5%RH, 596hrs) IPC-TM-650 2.6.14.1	>1 x 10 ⁸ Ω No Dentrige Growth	>1 x 10 ⁸ Ω No Dentrige Growth	>1 x 10 ⁸ Ω No Dentrige Growth	>1 x 10 ⁸ Ω No Dentrige Growth	>1 x 10 ⁸ Ω No Dentrige Growth	>1 x 10 ⁸ Ω No Dentrige Growth	>1 x 10 ⁸ Ω No Dentrige Growth	>1 x 10 ⁸ Ω No Dentrige Growth	>1 x 10 ⁸ Ω No Dentrige Growth	>1 x 10 ⁸ Ω No Dentrige Growth	>1 x 10 ⁸ Ω No Dentrige Growth
	Flux Activity Classification IPC J-STD-004	ROM1	ROM0	ROM0	ROM1	RELO	ROM1	ROM1	INH1	ORH0	ORH1	ORM0
	Spread Factor JIS Z 3197 8.3.1.1	>85% (SnPb)	>70%	>75%	>85% (SnPb)	>70%	>75%	>80%	>85% (SnPb)	>80% (SnPb)	>80% (SnPb)	>70%
Applications & Appearance	Surface Finish	Shiny	Shiny	Shiny	Shiny	Shiny	Matte	Matte	Matte	Slightly Matte	Shiny	Shiny
	Residue Removal	Not Required	Not Required	Not Required	Not Required	Not Required	Not Required	Not Required	Removal with plain water at 60°C +/- 5°C	Removal with plain water at 60°C +/- 5°C	Removal with plain water at 60°C +/- 5°C	Not Required
	Application	Component Lead Tinning	Spraying, Dipping	Spraying, Foaming, Dipping, Component Lead Tinning	Spraying, Dipping	Spraying, Foaming, Dipping	Spraying, Foaming, Dipping	Spraying, Foaming, Dipping	Wire and Component Lead Tinning	Wire and Component Lead Tinning	Spraying, Foaming, Dipping	Spraying, Dipping
	Solvent	#6000	#2000	#2000	#2002	#2000	#2000	#2000	-	-	#3000	-

	Formula Type	LF	LFH02	LF138	LFF1	5M097	LFB21	LF249	2T/5T
Product Features	Alloy Compatibility	V347/V349				SAC305	SACB1053	SAC105	SnPb/SnPbAg
		For standard stencil printing as well as paste-in-hole reflow application. It carries good dispensing, tackiness and drip-free characteristics.	For superior printing requirement. It provides hours of stable stencil life, tack time and repeatable brick definition.	Designed for environmental robustness in cold temperature and low humidity condition. This solder paste is formulated to reduce voiding in BGA solder.	Designed for water soluble application. It offers repeatable and consistent paste transfer volume, excellent solderability with reduced voiding.	Developed to have better wettability in reflow process. This alloy is designed to be substituted for Tin/Lead in all electronics assembly soldering operations.	Developed to have better wettability in reflow process. It is cost effective while shows comparable mechanical strength with SAC305.	Asahi solder paste was developed to have better wettability in reflow soldering process. It is cost effective while shows comparable mechanical strength with SAC305.	Specially formulated for Fine Pitch Surface Mount application where application pitch could be as fine as 12 mils pitch.
Flux Content	Powder Type	Type 3	Type 3, Type 4	Type 3, Type 4, Type5	Type 3	Type 4	Type 4	Type 4	Type 3
	Type 3 (24-45µm)	11.0 ± 0.5 wt%	11.0 ± 0.5 wt%	11.0 ± 0.5 wt%	12.0 ± 0.5 wt%	-	-	-	10.0 ± 0.5 wt%
	Type 4 (20-38µm)	-	11.0 ± 0.5 wt%	12.0 ± 0.5 wt%	-	11.5 ± 1.0 wt%	11.5 ± 0.5 wt%	11.5 ± 0.5 wt%	-
	Type 5 (15-25µm)	-	-	12.0 ± 0.5 wt%	-	-	-	-	-
Properties	Viscosity IPC-TM-650 2.4.34	780 ± 15% KcPs	800 ± 15% KcPs (Type 3) 800 ± 15% KcPs (Type 4)	750 ± 15% KcPs (Type 3) 700 ± 15% KcPs (Type 4) 750 ± 15% KcPs (Type 5)	600 ± 15% KcPs	750 ± 250 KcPs	680 ± 15% KcPs	650 ± 15% KcPs	1000 ± 15% KcPs
	Tackiness JIS Z 3284 Annex 9	>24 hrs (>100gf)	>24 hrs (>100gf)	>24 hrs (>100gf)	>24 hrs (>100gf)	>24 hrs (>100gf)	>24 hrs (>100gf)	>24 hrs (>100gf)	>24 hrs (>100gf)
	Slump Test JIS Z 3284 Annex 7, Annex 8	No Slump Observed	No Slump Observed	No Slump Observed	No Slump Observed	No Slump Observed	No Slump Observed	No Slump Observed	No Slump Observed
	Solder Ball Test JIS Z 3284 Annex 11	Passed	Passed	Passed	Passed	Passed	Passed	Passed	Passed
	Residue Dryness Test JIS Z 3284 Annex 12	Passed	Passed	Passed	Passed	Passed	Passed	Passed	Passed
	Halide Content JIS Z 3197 8.1.4.2.1	Not Added	Not Added	Not Added	< 0.05 wt%	Not Added	Not Added	Not Added	Not Added
	Halogen Content EN14582	Not Detected	Not Detected	Not Detected	< 0.05 wt%	Not Detected	Not Detected	Not Detected	Not Detected
	SIR (85°C, 85%RH, 168hrs) IPC-TM-650 2.6.3.3	>1 x 10 ⁸ Ω	>1 x 10 ⁸ Ω	>1 x 10 ⁸ Ω	>1 x 10 ⁸ Ω	>1 x 10 ⁸ Ω	>1 x 10 ⁸ Ω	>1 x 10 ⁸ Ω	>1 x 10 ⁸ Ω
	ECM (85°C, 88.5%RH, 596hrs) IPC-TM-650 2.6.14.1	>1 x 10 ⁸ Ω No Dentrinite Growth	>1 x 10 ⁸ Ω No Dentrinite Growth	>1 x 10 ⁸ Ω No Dentrinite Growth	>1 x 10 ⁸ Ω No Dentrinite Growth	>1 x 10 ⁸ Ω No Dentrinite Growth	>1 x 10 ⁸ Ω No Dentrinite Growth	>1 x 10 ⁸ Ω No Dentrinite Growth	>1 x 10 ⁸ Ω No Dentrinite Growth
	Flux Activity Classification IPC J-STD-004	ROLO	ROLO	ROLO	ROHO	ROLO	ROMO	ROMO	ROLO
	Residue Removal	Not Required	Not Required	Not Required	Rinse with DI water at 40°C-65°C	Not Required	Not Required	Not Required	Not Required
	Stencil Life	At least 24 hrs	At least 24 hrs	At least 24 hrs	At least 24 hrs	At least 24 hrs	At least 24 hrs	At least 24 hrs	At least 24 hrs
Reflow Peak Temperature	≥220°C (V347) ≥225°C (V349)				≥235°C		≥240°C	≥205°C	



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