alpha

COMPUTING
MATERIAL SOLUTIONS

MacDermid Alpha
ELECTRONICS SOLUTIONS

COMPUT

Alpha's mission is to be the industry's preferred supplier of **high-performance materials** and chemistry. We accomplish this by delivering **leading technology and value**, made possible by our **innovative products, processes and people**. For meeting requirements of today's assemblies and for tomorrow's challenges, Alpha is the right choice for your material supply.

ING

Computing related equipment must have a high degree of functionality and be capable of both processing large amounts of data quickly, as well as, connecting users to one another. This equipment also requires a large amount of processing speed and storage to support the use of complex software programs, displays and other peripherals. Today's computers and servers are complex in design and require joining materials that enable the assembly of a wide range of board types in a variety of different manufacturing processes and environments.

Tablets

Notebooks

Desktops

Servers

Hard Drives, Solid State Drives and Memory

Power Supplies

Peripherals

Tablets

Tablets represent the leading edge of assembly technology in the computer segment due to their functionality and complexity. Manufacturers of tablets value high performance and sustainable solder materials, as well as, creative solutions to overcome severe space constraints.

Key Requirements:

- High mechanical (i.e., drop shock) and electrical reliability
- Fine feature capable
- Product options to enable flexibility in board design and manufacturing process
- Excellent value, lowers total cost of ownership

COMPUTING: Tablets

APPLICATION	PRODUCT TYPE	PRODUCT	LOW TEMP	PB FREE	HALOGEN FREE
SMT – Printing and Dispensing	Solder Paste	**ALPHA® OM-353** *SAC305 / SACX Plus 0307* • Repeatable printing down to 0.3mm/.012” pitch and 01005 passives • Lowest post reflow residues of Alpha’s chemistries • Low HIP and NWO Defects • Available in low silver SACX Plus alloy(s) for improved value		Pb	HF
		ALPHA® OM-550 *HRL1* • Best mechanical performance of Alpha’s low temperature solder alloys • Repeatable printing down to 0.3mm/.012” pitch and 01005 passives • Significant reduction in warpage-induced defects such as HIP and NWO	LTS	Pb	HF
SMT – Jetting	Solder Paste	**ALPHA® JP-510** *SAC305* • Jettable to 0.5mm/.020” pitch • High mechanical and electrochemical reliability		Pb	HF
		ALPHA® JP-501 *SnBiAg* • Low HIP and NWO Defects • Jettable to 0.5mm/.020” pitch	LTS	Pb	HF
SMT / PTH – Pick and Place	Preforms	**ALPHA® Tape and Reel Preforms** • High solder volume precision and production yields using pick and place • Available in many alloys, sizes and shapes • Flux coated versions available (*some fluxes contain halogens)	LTS	Pb	HF*
SMT / PTH – Point Soldering, Rework and Repair	Cored Wire	**ALPHA® Telecore® HF-850** *SAC305 / SACX Plus 0307* • Performs well with all standard pad finishes • Can be used in both robotic and manual soldering processes • ROL0		Pb	HF
		ALPHA® Telecore® XL-825 *SAC305 / SACX Plus 0307* • Best for difficult to solder surfaces • Can be used in both robotic and manual soldering processes • ROL1		Pb	
SMT – Dispensing	Underfill	**ALPHA® HiTech™ CU31-3085B** • Fast flow • Reworkable			HF
		ALPHA® HiTech™ CU31-300(A) • Fast flow • Excellent Impact Resistance • 20-day Pot Life • Reworkable			HF
	Encapsulant	**ALPHA® HiTech™ EN31-4007B** • Excellent Impact Bend Resistance • 20-day Pot Life • Reworkable			HF

Notebooks

Notebook computers available in the market today are extremely powerful with high capacity storage in a relatively small footprint. As a result, there are a wide variety of board materials, components and surface finishes being used in their assembly. Companies making notebook computers require joining materials which give them the greatest degree of flexibility in their board design.

Key Requirements:

- High mechanical and electrical reliability
- Fine feature capable
- Product options to enable flexibility in board design and manufacturing process
- Excellent value, lowers total cost of ownership

COMPUTING: Notebooks

APPLICATION	PRODUCT TYPE	PRODUCT	LOW TEMP	PB FREE	HALOGEN FREE
SMT – Printing and Dispensing	Solder Paste	**ALPHA® OM-353** *SAC305 / SACX Plus 0307* • Repeatable printing down to 0.3mm/.012” pitch and 01005 passives • Lowest post reflow residues of Alpha’s chemistries • Low HIP and NWO Defects • Available in low silver SACX Plus alloy(s) for improved value		Pb	HF
		ALPHA® OM-363 *SAC305* • Repeatable printing down to 0.4mm/.016” pitch • Low NWO and HIP Defects		Pb	HF
		ALPHA® OM-550 *HRL1* • Best mechanical performance of Alpha’s low temperature solder alloys • Repeatable printing down to 0.3mm/.012” pitch and 01005 passives • Significant reduction in warpage-induced defects such as HIP and NWO	LTS	Pb	HF
SMT – Jetting	Solder Paste	**ALPHA® JP-510** *SAC305* • Jettable to 0.5mm/.020” pitch • High mechanical and electrochemical reliability		Pb	HF
		ALPHA® JP-501 *SnBiAg* • Low HIP and NWO Defects • Jettable to 0.5mm/.020” pitch	LTS	Pb	HF
SMT / PTH – Pick and Place	Preforms	**ALPHA® Tape and Reel Preforms** • High solder volume precision and production yields using pick and place • Available in many alloys, sizes and shapes • Flux coated versions available (*some fluxes contain halogens)	LTS	Pb	HF*
SMT / PTH – Point Soldering, Rework and Repair	Cored Wire	**ALPHA® Telecore® HF-850** *SAC305 / SACX Plus 0307* • Performs well with all standard pad finishes • Can be used in both robotic and manual soldering processes • ROL0		Pb	HF
		ALPHA® Telecore® XL-825 *SAC305 / SACX Plus 0307* • Best for difficult to solder surfaces • Can be used in both robotic and manual soldering processes • ROL1		Pb	
SMT – Dispensing	Underfill	**ALPHA® HiTech™ CU31-3085B** • Fast flow • Reworkable			HF
		ALPHA® HiTech™ CU31-300(A) • Fast flow • Excellent Impact Resistance • 20-day Pot Life • Reworkable			HF
	Encapsulant	**ALPHA® HiTech™ EN31-4007B** • Excellent Impact Bend Resistance • 20-day Pot Life • Reworkable			HF

COMPUTING: Notebooks continued

APPLICATION	PRODUCT TYPE	PRODUCT	LOW TEMP	PB FREE	HALOGEN FREE
PTH – Wave / Selective Soldering	Bar and Solid Wire Solder	**ALPHA® SACX Plus 0807** • Low Silver (0.8%) for improved value vs. SAC305 • SAC305-like soldering and reliability performance on complex assemblies • Low Copper dissolution and low drossing		Pb	
		ALPHA® SACX Plus 0307 • Low Silver (0.3%) for improved value vs. SAC305 • Low Copper dissolution and low drossing • Excellent for most standard assemblies		Pb	
		ALPHA® SnCX Plus 07 • Silver free for best value of SnCu alloys • Low Copper dissolution and low drossing		Pb	
	Liquid Flux	**ALPHA® EF-6103** • ORL0 • Passes IPC J-STD-004B • Best for selective soldering processes		Pb	
		ALPHA® EF-6808HF • ROL0 • Passes IPC J-STD-004B • Excellent for most standard complexity assemblies		Pb	HF
		ALPHA® EF-8000 • ROL0 • Passes IPC J-STD-004B • Excellent for high density board		Pb	

Desktops

Desktop computers have a wide range of functionality and capability without the space constraints of a notebook PC. Most are extremely powerful with high capacity storage. There are a wide variety of board materials, components and surface finishes being used in their assembly.

Key Requirements:

- High mechanical and electrical reliability
- Fine feature capable
- Product options to enable flexibility in board design and manufacturing process
- Excellent value, lowers total cost of ownership

COMPUTING: Desktops

APPLICATION	PRODUCT TYPE	PRODUCT	LOW TEMP	PB FREE	HALOGEN FREE
SMT – Printing and Dispensing	Solder Paste	**ALPHA® OM-353** *SAC305 / SACX Plus 0307* • Repeatable printing down to 0.3mm/.012" pitch and 01005 passives • Lowest post reflow residues of Alpha's chemistries • Low HIP and NWO Defects • Available in low silver SACX Plus alloy(s) for improved value		Pb	HF
		ALPHA® OM-363 *SAC305* • Repeatable printing down to 0.4mm/.016" pitch • Low NWO and HIP Defect		Pb	HF
		ALPHA® OM-550 *HRL1* • Best mechanical performance of Alpha's low temperature solder alloys • Repeatable printing down to 0.3mm/.012" pitch and 01005 passives • Significant reduction in warpage-induced defects such as HIP and NWO	LTS	Pb	HF
SMT – Jetting	Solder Paste	**ALPHA® JP-510** *SAC305* • Jettable to 0.5mm/.020" pitch • High mechanical and electrochemical reliability		Pb	HF
		ALPHA® JP-501 *SnBiAg* • Low HIP and NWO Defects • Jettable to 0.5mm/.020" pitch	LTS	Pb	HF
SMT / PTH – Pick and Place	Preforms	**ALPHA® Tape and Reel Preforms** • High solder volume precision and production yields using pick and place • Available in many alloys, sizes and shapes • Flux coated versions available (*some fluxes contain halogens)	LTS	Pb	HF*
SMT / PTH – Point Soldering, Rework and Repair	Cored Wire	**ALPHA® Telecore® HF-850** *SAC305 / SACX Plus 0307* • Performs well with all standard pad finishes • Can be used in both robotic and manual soldering processes • ROL0		Pb	HF
		ALPHA® Telecore® XL-825 *SAC305 / SACX Plus 0307* • Best for difficult to solder surfaces • Can be used in both robotic and manual soldering processes • ROL1		Pb	

COMPUTING: Desktops continued

APPLICATION	PRODUCT TYPE	PRODUCT	LOW TEMP	PB FREE	HALOGEN FREE
PTH – Wave / Selective Soldering	Bar and Solid Wire Solder	**ALPHA® SACX Plus 0807** • Low Silver (0.8%) for improved value vs. SAC305 • SAC305-like soldering and reliability performance on complex assemblies • Low Copper dissolution and low drossing		Pb	
		ALPHA® SACX Plus 0307 • Low Silver (0.3%) for improved value vs. SAC305 • Low Copper dissolution and low drossing • Excellent for most standard assemblies		Pb	
		ALPHA® SnCX Plus 07 • Silver free for best value of SnCu alloys • Low Copper dissolution and low drossing		Pb	
	Liquid Flux	**ALPHA® EF-6103** • ORL0 • Passes IPC J-STD-004B • Best for selective soldering processes		Pb	
		ALPHA® EF-6808HF • ROL0 • Passes IPC J-STD-004B • Excellent for most standard complexity assemblies		Pb	HF
		ALPHA® EF-8000 • ROL0 • Passes IPC J-STD-004B • Excellent for high density board		Pb	

Servers

Computer servers connect workstations, PCs and many other communications devices to one another locally and via the internet. This equipment is generally complex and powerful in design and requires joining materials that are highly robust and can withstand the most challenging manufacturing environments yet meet high surface insulation resistance requirements.

Key Requirements:

- Product options to enable flexibility in board design and manufacturing process
- High electrochemical reliability alone and in combination with other joining materials
- High thermal and electrical conductivity
- High throughput, low defects

COMPUTING: Servers

APPLICATION	PRODUCT TYPE	PRODUCT	LOW TEMP	PB FREE	HALOGEN FREE
SMT – Printing and Dispensing	Solder Paste	**ALPHA® OM-363** *SAC305* • Repeatable printing down to 0.4mm/.016” pitch • Low NWO and HIP Defects		Pb	HF
		ALPHA® OM-550 *HRL1* • Best mechanical performance of Alpha’s low temperature solder alloys • Repeatable printing down to 0.3mm/.012” pitch and 01005 passives • Significant reduction in warpage-induced defects such as HIP and NWO	LTS	Pb	HF
SMT – Jetting	Solder Paste	**ALPHA® JP-510** *SAC305* • Jettable to 0.5mm/.020” pitch • High mechanical and electrochemical reliability		Pb	HF
		ALPHA® JP-501 *SnBiAg* • Low HIP and NWO Defects • Jettable to 0.5mm/.020” pitch	LTS	Pb	HF
SMT / PTH – Pick and Place	Preforms	**ALPHA® BTC-578 Accuflux Preforms** *Innolot / SAC305 / Low-temp* • Increasing thermal conductivity and heat dissipation through void reduction • Low flux residue improves electrochemical reliability • Prevents mechanical stackup issues through increased solder volume	LTS	Pb	HF
		ALPHA® Tape and Reel Preforms • High solder volume precision and production yields using pick and place • Available in many alloys, sizes and shapes • Flux coated versions available (*some fluxes contain halogens)	LTS	Pb	HF*
SMT / PTH – Point Soldering, Rework and Repair	Cored Wire	**ALPHA® Telecore® HF-850** *SAC305 / SACX Plus 0307* • Performs well with all standard pad finishes • Can be used in both robotic and manual soldering processes • ROL0		Pb	HF
		ALPHA® Telecore® XL-825 *SAC305 / SACX Plus 0307* • Best for difficult to solder surfaces • Can be used in both robotic and manual soldering processes • ROL1		Pb	
PTH – Wave / Selective Soldering	Bar and Solid Wire Solder	**ALPHA® SAC305** • Excellent soldering performance • High thermal fatigue resistance • Widely used		Pb	
		ALPHA® SACX Plus 0807 • Low Silver (0.8%) for improved value vs. SAC305 • SAC305-like soldering and reliability performance on complex assemblies • Low Copper dissolution and low drossing		Pb	
	Liquid Flux	**ALPHA® EF-6808HF** • ROL0 • Passes IPC J-STD-004B • Excellent for most standard complexity assemblies		Pb	HF
		ALPHA® EF-8800HF • ORL0 • Passes IPC J-STD-004B • Designed for thick, complex boards		Pb	HF

Hard Drives,
Solid State Drives
and Memory

Storage devices are used across a spectrum of electronic devices and are built in controlled manufacturing environments. Manufacturers value joining material quality and repeatable processing performance to meet their high quality standards.

Key Requirements:

- High mechanical and electrical reliability
- Fine feature capable
- Wide processing window
- High throughput, low defects

COMPUTING: Hard Drives, Solid State Drives and Memory

APPLICATION	PRODUCT TYPE	PRODUCT	LOW TEMP	PB FREE	HALOGEN FREE
SMT – Printing and Dispensing	Solder Paste	**ALPHA® OM-353** *SAC305 / SACX Plus 0307* • Repeatable printing down to 0.3mm/.012” pitch and 01005 passives • Lowest post reflow residues of Alpha’s chemistries • Low HIP and NWO Defects • Available in low silver SACX Plus alloy(s) for improved value		Pb	HF
		ALPHA® OM-550 *HRL1* • Best mechanical performance of Alpha’s low temperature solder alloys • Repeatable printing down to 0.3mm/.012” pitch and 01005 passives • Significant reduction in warpage-induced defects such as HIP and NWO	LTS	Pb	HF
SMT – Jetting	Solder Paste	**ALPHA® JP-510** *SAC305* • Jettable to 0.5mm/.020” pitch • High mechanical and electrochemical reliability		Pb	HF
		ALPHA® JP-501 *SnBiAg* • Low HIP and NWO Defects • Jettable to 0.5mm/.020” pitch	LTS	Pb	HF
SMT / PTH – Pick and Place	Preforms	**ALPHA® Tape and Reel Preforms** • High solder volume precision and production yields using pick and place • Available in many alloys, sizes and shapes • Flux coated versions available (*some fluxes contain halogens)	LTS	Pb	HF*
SMT / PTH – Point Soldering, Rework and Repair	Cored Wire	**ALPHA® Telecore® HF-850** *SAC305 / SACX Plus 0307* • Performs well with all standard pad finishes • Can be used in both robotic and manual soldering processes • ROL0		Pb	HF
		ALPHA® Telecore® XL-825 *SAC305 / SACX Plus 0307* • Best for difficult to solder surfaces • Can be used in both robotic and manual soldering processes • ROL1		Pb	

Power Supplies

Power supply assemblies are used across a wide spectrum of devices and equipment in virtually all electronic markets. Power supplies are made in many places and, as a result, there are a wide variety of board materials, components and process conditions used.

Key Requirements:

- High performance under wide process conditions
- Excellent value, lowers total cost of ownership
- High mechanical and electrochemical reliability

COMPUTING: Power Supplies

APPLICATION	PRODUCT TYPE	PRODUCT	LOW TEMP	PB FREE	HALOGEN FREE
SMT – Printing and Dispensing	Solder Paste	**ALPHA® OM-353** *SAC305 / SACX Plus 0307* • Repeatable printing down to 0.3mm/.012” pitch and 01005 passives • Lowest post reflow residues of Alpha’s chemistries • Low HIP and NWO Defects • Available in low silver SACX Plus alloy(s) for improved value		Pb	HF
		ALPHA® OM-535 *SBX02* • Low temperature solder alloy with improved mechanical performance vs. SnBiAg • Repeatable printing down to 0.4mm/.016” pitch	LTS	Pb	HF
		ALPHA® CVP-520MSD BC *SnBiAg* • Repeatable printing down to 0.4mm/.016” pitch • Low solder paste dripping and tailing	LTS	Pb	HF
SMT / PTH – Pick and Place	Preforms	**ALPHA® Tape and Reel Preforms** • High solder volume precision and production yields using pick and place • Available in many alloys, sizes and shapes • Flux coated versions available (*some fluxes contain halogens)	LTS	Pb	HF*
SMT / PTH – Point Soldering, Rework and Repair	Cored Wire	**ALPHA® Telecore® XL-825** *SAC305 / SACX Plus 0307* • Best for difficult to solder surfaces • Can be used in both robotic and manual soldering processes • ROL1		Pb	
SMT – Dispensing	Adhesive	**ALPHA® HiTech™ SM42-1311** • Non-Sagging • Excellent adhesion on FR4 • Resists change due to high heat post application processing (i.e., wave soldering)			HF
SMT – Printing	Adhesive	**ALPHA® HiTech™ SM42-120P** • Non-Sagging • Excellent adhesion on FR4 • Resists change due to high heat post application processing (i.e., wave soldering)			HF

COMPUTING: Power Supplies continued

APPLICATION	PRODUCT TYPE	PRODUCT	LOW TEMP	PB FREE	HALOGEN FREE
PTH – Wave / Selective Soldering	Bar and Solid Wire Solder	**ALPHA® SACX Plus 0807** • Low Silver (0.8%) for improved value vs. SAC305 • SAC305-like soldering and reliability performance on complex assemblies • Low Copper dissolution and low drossing		Pb	
		ALPHA® SACX Plus 0307 • Low Silver (0.3%) for improved value vs. SAC305 • Low Copper dissolution and low drossing • Excellent for most standard assemblies		Pb	
		ALPHA® SnCX Plus 07 • Silver free for best value of SnCu alloys • Low Copper dissolution and low drossing		Pb	
	Liquid Flux	**ALPHA® EF-6103** • ORL0 • Passes IPC J-STD-004B • Best for selective soldering processes		Pb	
		ALPHA® EF-6808HF • ROL0 • Passes IPC J-STD-004B • Excellent for most standard complexity assemblies		Pb	HF
		ALPHA® EF-8000 • ROL0 • Passes IPC J-STD-004B • Excellent for high density board		Pb	

Peripherals

Peripherals include a host of electronic devices that link directly to a PC via a wired or wireless connection and provide a variety of internal and external functions related to things like audio, video (displays), printing and cursor control (mouse). Peripherals can vary widely in quality and complexity with most common using medium complexity assemblies requiring high speed, low cost manufacturing.

Key Requirements:

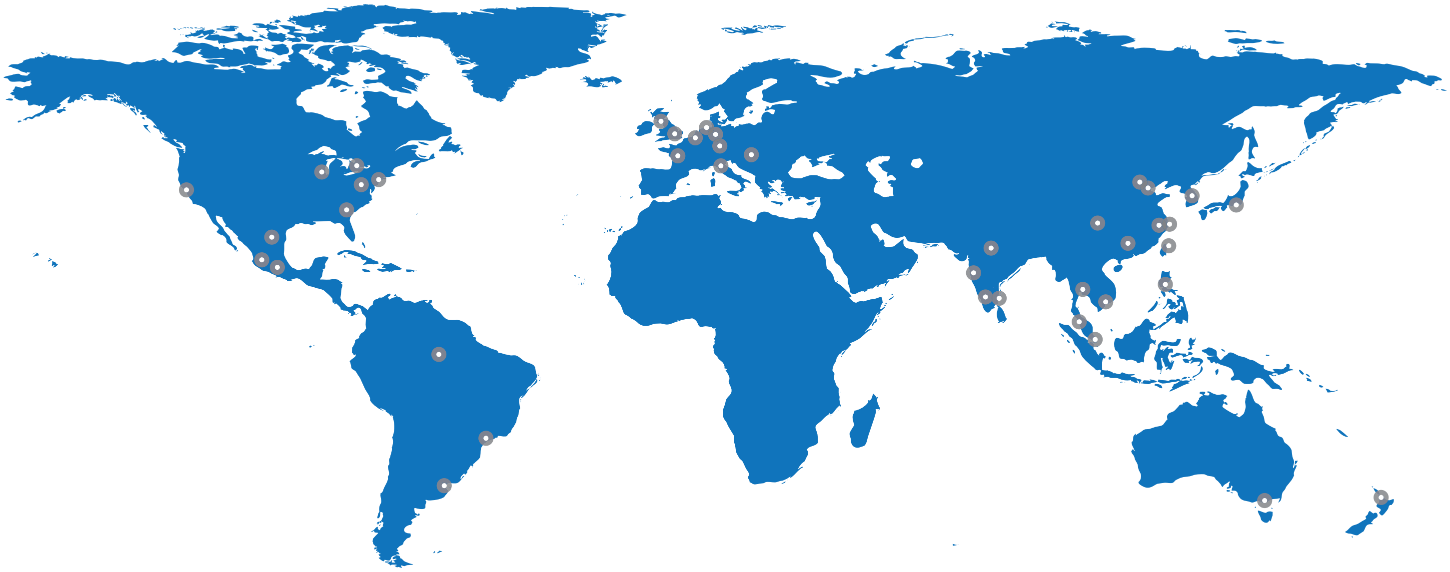
- High performance under wide process conditions
- Excellent value, lowers total cost of ownership
- High mechanical and electrochemical reliability

COMPUTING: Peripherals

APPLICATION	PRODUCT TYPE	PRODUCT	LOW TEMP	PB FREE	HALOGEN FREE
SMT – Printing and Dispensing	Solder Paste	**ALPHA® OM-353** *SAC305 / SACX Plus 0307* • Repeatable printing down to 0.3mm/.012” pitch and 01005 passives • Lowest post reflow residues of Alpha’s chemistries • Low HIP and NWO Defects • Available in low silver SACX Plus alloy(s) for improved value		Pb	HF
		ALPHA® OM-550 *HRL1* • Best mechanical performance of Alpha’s low temperature solder alloys • Repeatable printing down to 0.3mm/.012” pitch and 01005 passives • Significant reduction in warpage-induced defects such as HIP and NWO	LTS	Pb	HF
SMT / PTH – Pick and Place	Preforms	**ALPHA® Tape and Reel Preforms** • High solder volume precision and production yields using pick and place • Available in many alloys, sizes and shapes • Flux coated versions available (*some fluxes contain halogens)	LTS	Pb	HF*
SMT / PTH – Point Soldering, Rework and Repair	Cored Wire	**ALPHA® Telecore® XL-850** *SAC305 / SACX Plus 0307* • Performs well with all standard pad finishes • Can be used in both robotic and manual soldering processes • ROL0		Pb	HF
		ALPHA® Telecore® XL-825 *SAC305 / SACX Plus 0307* • Best for difficult to solder surfaces • Can be used in both robotic and manual soldering processes • ROL1		Pb	
SMT – Dispensing	Adhesive	**ALPHA® HiTech™ SM42-1311** • Non-Sagging • Excellent adhesion on FR4 • Resists change due to high heat post application processing (i.e., wave soldering)			HF
SMT – Printing	Adhesive	**ALPHA® HiTech™ SM42-120P** • Non-Sagging • Excellent adhesion on FR4 • Resists change due to high heat post application processing (i.e., wave soldering)			HF

COMPUTING: Peripherals continued

APPLICATION	PRODUCT TYPE	PRODUCT	LOW TEMP	PB FREE	HALOGEN FREE
PTH – Wave / Selective Soldering	Bar and Solid Wire Solder	**ALPHA® SACX Plus 0807** • Low Silver (0.8%) for improved value vs. SAC305 • SAC305-like soldering and reliability performance on complex assemblies • Low Copper dissolution and low drossing		Pb	
		ALPHA® SACX Plus 0307 • Low Silver (0.3%) for improved value vs. SAC305 • Low Copper dissolution and low drossing • Excellent for most standard assemblies		Pb	
		ALPHA® SnCX Plus 07 • Silver free for best value of SnCu alloys • Low Copper dissolution and low drossing		Pb	
	Liquid Flux	**ALPHA® EF-6103** • ORL0 • Passes IPC J-STD-004B • Best for selective soldering processes		Pb	
		ALPHA® EF-6808HF • ROL0 • Passes IPC J-STD-004B • Excellent for most standard complexity assemblies		Pb	HF
		ALPHA® EF-8000 • ROL0 • Passes IPC J-STD-004B • Excellent for high density board		Pb	



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