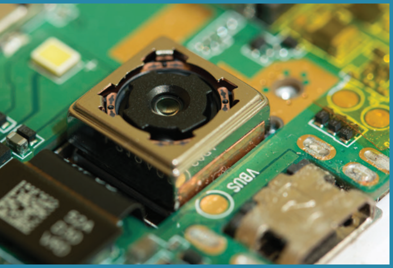
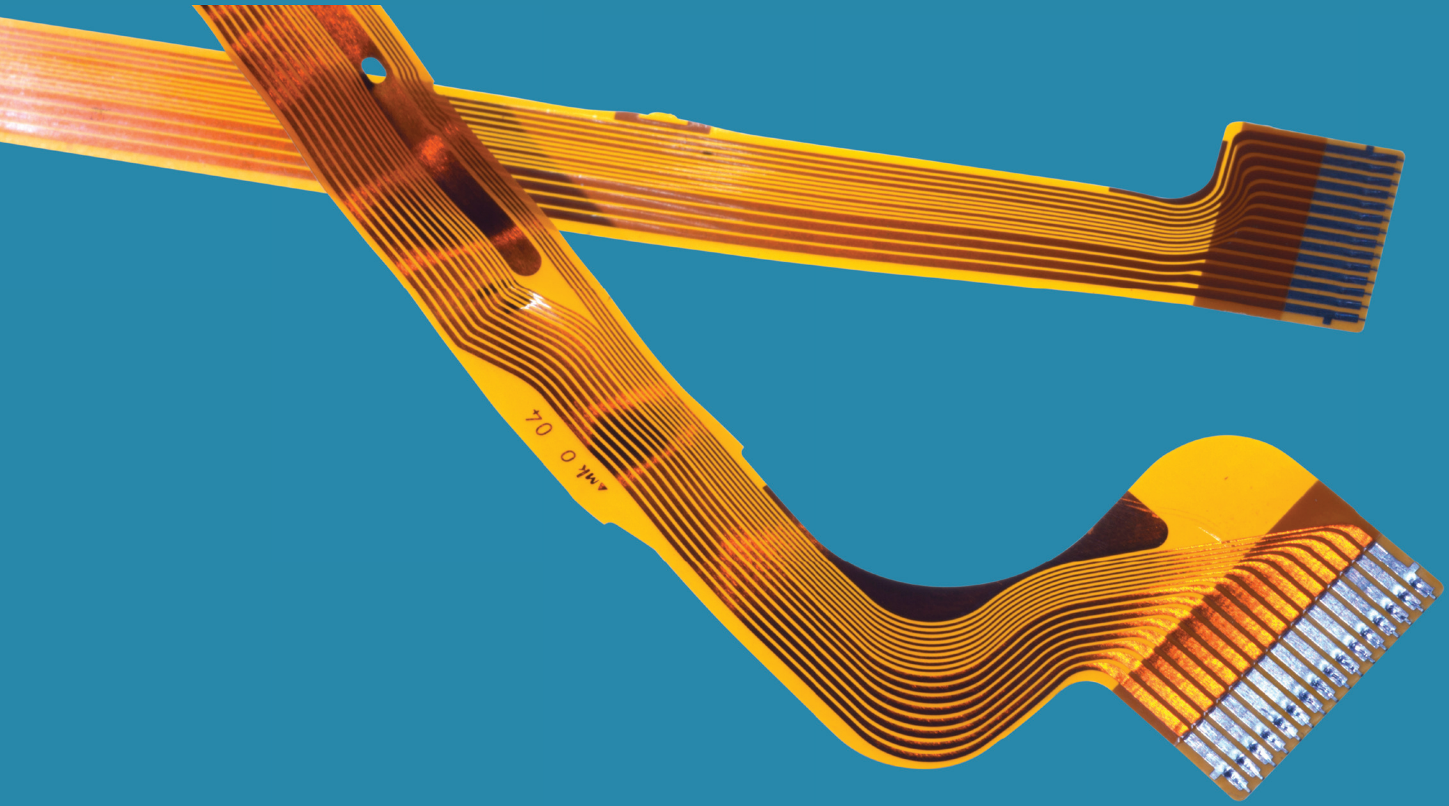
alpha

COMMUNICATIONS
MATERIAL SOLUTIONS

MacDermid Alpha
ELECTRONICS SOLUTIONS

COMMUNICA





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.

TIONS

Devices and equipment used in the proliferation of global communications continue to develop in terms of functionality and complexity. Faster data transmission speeds, increased data storage, smaller form factors and sustainable business practices are just some of the issues that drive this industry. Alpha has the products and services needed to ensure that assemblers have the solutions they need to address these and other important board assembly concerns.

Mobile Phone and Wearable Devices

Power Supplies

Camera Modules and Flexible Circuit Board Assembly

Network Infrastructure Servers, Routers, Switches, Antennas and Wireless Modems

Mobile Phone and Wearable Devices

Mobile devices represent the leading edge of assembly technology due to their size and complexity. Manufacturers of mobile phones and wearable devices value high performance and sustainable solder materials, as well as, creative solutions to enable this miniaturization trend.

Key Material 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

COMMUNICATIONS: Mobile Phone and Wearable Devices

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		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

Power Supplies

Power supply assemblies are used across a wide spectrum of devices and equipment in virtually all electronic markets. Modern power supplies are manufactured all over the world and, as a result, there are a wide variety of board materials, components and process conditions used.

Key Material Requirements:

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

COMMUNICATIONS: 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		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
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	
	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-8800HF • ORL0 • Passes IPC J-STD-004B • Designed for thick, complex boards		Pb	HF

Camera Modules and Flexible Circuit Board Assembly

Assemblies in this segment are used in smartphones, some wearable electronics and a variety of other non-communications related devices. Camera modules are generally quite small and use components which are sensitive to a variety of mechanical stresses.

Key Material Requirements:

- High mechanical and electrical reliability
- Fine feature capable
- Minimal residues
- High throughput, low defects

COMMUNICATIONS: Camera Modules and Flexible Circuit Board Assembly

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
		ALPHA® WS-820 • Water Soluble • Repeatable printing down to 0.4mm/.016” pitch		Pb	
		ALPHA® OM-347 • Easily cleaned with solvent • Repeatable printing down to 0.4mm/.016” pitch		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™ CU13-3150** • Low temperature cure • Fast Flow • Reworkable			HF
	Adhesives	**ALPHA® HiTech™ AD13-9690BH** • Low temperature cure • Excellent Adhesion on LCP, Magnet • Excellent Drop Impact Performance			HF

Network Infrastructure Servers, Routers, Switches, Antennas and Wireless Modems

Devices in this category support the high speed, uninterrupted transmission of an ever increasing amount of electronic communications data circulating globally and enabling the growth in the Internet of Things. This equipment is generally complex and powerful in design.

Key Material Requirements:

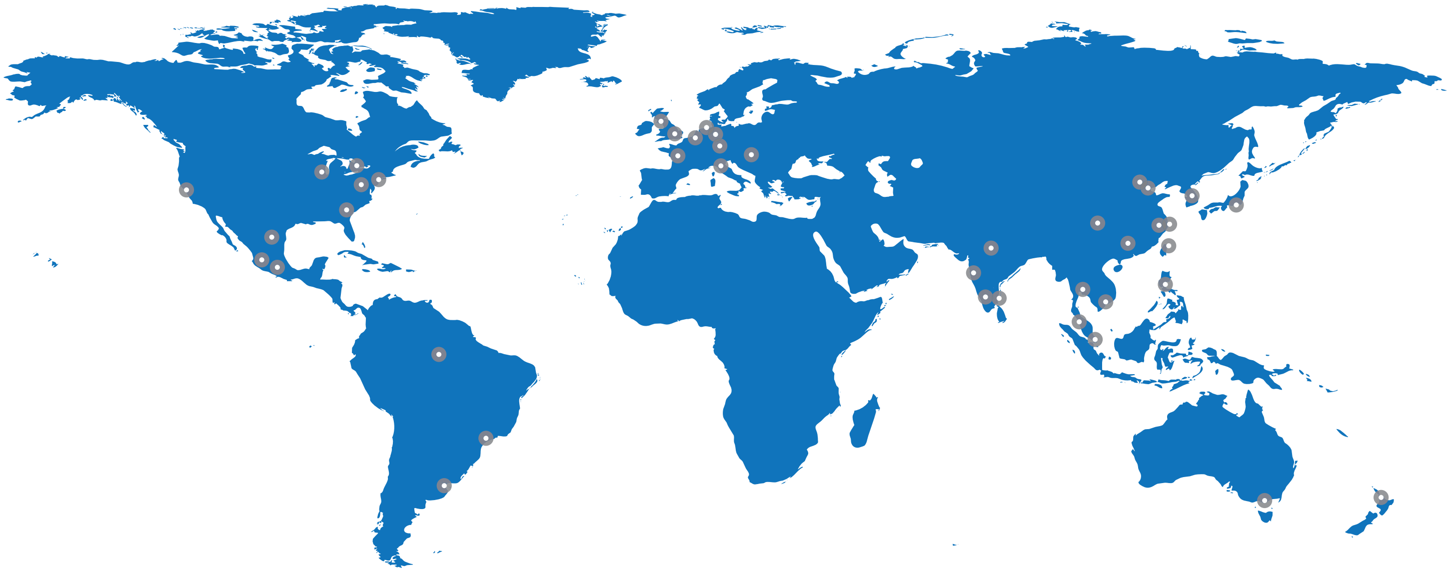
- Product options to enable flexibility in board design and manufacturing process
- High electrochemical reliability alone and in combination with other joining materials
- High thermal and electrical conductivity
- High throughput, low defects

COMMUNICATIONS: Network Infrastructure Servers, Routers, Switches, Antennas and Wireless Modems

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		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*
		ALPHA® BTC-578 Accuflux Preforms *SAC305 / Innolot / Low-temp* • Increasing thermal conductivity and dissipation through void reduction • Low flux residue improves electrochemical reliability • Prevents mechanical stackup issues through increased solder volume	LTS	Pb	
SMT / PTH – Point Soldering, Rework and Repair	Cored Wire	**ALPHA® Telecore® HF-850** *SAC305* • 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* • Best for difficult to solder surfaces • Can be used in both robotic and manual soldering processes • ROL1		Pb	

COMMUNICATIONS: Network Infrastructure Servers, Routers, Switches, Antennas and Wireless Modems continued

APPLICATION	PRODUCT TYPE	PRODUCT	LOW TEMP	PB FREE	HALOGEN FREE	VOC FREE
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		
		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		
	Liquid Flux	**ALPHA® EF-2210** • ORL0 • Passes IPC J-STD-004A		Pb		VOC
		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-8800HF • ORL0 • Passes IPC J-STD-004B • Designed for thick, complex boards		Pb	HF	



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