alpha ASSEMBLY SOLUTIONS™

ALPHA® Products Quick Reference Guide - 2017

Lead Free - No Clean and Water Soluble[1] Processes

Solder Paste No Clean in **BLACK** Water Soluble in **BLUE**	**OM-353**	Alpha's leading Lead Free No Clean Solder Paste. This is the paste to promote for any new opportunities. Excellent fine feature printing performance. Wide reflow process window with strong wetting / low Head-in-pillow & low Non-Wet Open Defects. Low rate of flux spread delivers superior post reflow cosmetics. Standard as Type 4, but also available in Type 5.(Future proof your customers) (ROLO)
	OM-358	Alpha's Lowest voiding Solder Paste. Promote this when customer's # 1 priority is low voiding. This is also our first choice for high reliability applications where customer has operating temps > 125 C. Has outperformed Indium 8.9HF1 for voiding. LED version is Lumet P30. NOTE: Use M13 Viscosity Standard is Type 4 (ROL0)
	CVP-390	CVP-390 has slightly better SIR performance than OM-353. If you have a customer who is ultra concerned about electrical reliability, we would consider promoting CVP-390 over OM-353. Any application in this space should be reviewed with Alpha CTS to determine which paste to promote. Otherwise, promote OM-353. (ROL0)
	OM-338 / OM-340	These solder pastes should no longer be promoted as we prefer to put our best foot forward with OM-353. If a current OM-338, OM-338PT or OM-340 customer using Type 3 powder inquires about Type 4 or finer, promote OM-353 as a better solution. (ROL0)
	OM-535	Low melting point alloy (138°C) paste; Type 4 only. Alpha SBX02 alloy; Improved Mechanical Strength & Drop Shock Resistance over a Sn57.6Bi0.4Ag alloy; Excellent printing; Designed to allow paste in through hole soldering of temp. sensitive components, eliminates need for wave or selective soldering; Zero Halogen. LED = Lumet P53 (ROLO)
	JP-500	Jetting paste. This is a SAC-305, type 5 particle size paste that was developed specifically for use in the Mydata Jet Printers, it is also approved by Parmi. Supplied in 30 cc cartridges. (ROL0)
	WS-820	Alpha's leading offering in this category. Excellent stencil life in this Operating Window: Humidity: 40 – 65%; Temp: < 78 F. Class III voiding resistance with an optimized soak profile. Easily cleaned with 120ºF water. (ORHO)
Bar Solder	**SnCX Plus 07**	Alpha's improved answer for customers using SN100C that want a silver free alloy. Faster wetting times with higher wetting force, delivers better Hole-fill and fewer bridges, or allows for running at lower temp. No License fee = very cost competitive. Can drop right in to SN100C pot, no need to drain first! Uses Alpha SACX Anti-oxidant (AO) for low dross. Much lower cost than SN100C AO (Germanium)
	SACX Plus® 0307	Broad latitude Pb-free alloy with excellent soldering on most Type III, II and I assemblies; Consistently reliable to -40°C - 125°C; Suitable for selective soldering and rework; Contains elements for reduced drossing and Cu erosion. PROMOTE THIS INSTEAD OF SACX-0307. It is patented, 0307 is not. Harder to get displaced by a competitor when you get SACX Plus 0307 in.
	SACX Plus® 0807	Soldering performance and reliability most similar to SAC305 and other high Ag alloys; For use on all board types including complex; dual sided assemblies with multiple internal copper layers; Suitable for selective soldering and rework; Contains elements for reduced drossing and Cu erosion. Limited competition in a .8% Silver alloy. **First choice for Selective Soldering**
	SAC-305	With 3% Silver, SAC-305 has the best hole-fill and mechanical reliability for thermal cycling. This is made to industry specs, so there are no elements added for dross reduction / copper dissolution. Above alloys offer more opportunity to add value, but some customers simply require this alloy.
	Bar Pricing	General guide for savings compared to SAC-305: SACX Plus 0807 ~ 27%. SACX Plus 0307 ~ 37% SnCX Plus 07 ~ 41%. Alpha SnCX plus 07 is usually at least 3% less than SN100C, and SACX Plus 0307 can be the same as customers pay for SN100C.
Cored Wire[4]	**Telecore® HF-850**	Fast wetting, Lowest spatter; Halogen & Halide free; High reliability; No-Clean; Low residue. Available in: SACX® Plus 0307; SAC305; Sn63; SnCX™ Plus 07; Sn99.3Cu0.7; (ROL0)
	Telecore® XL-825	Fastest wetting; low spatter; High reliability; Meets JIS AA requirements; No-Clean; Low residue; Best overall performance Available in: SACX® Plus 0307; SAC305; Sn63; SnCX™ Plus 07; Sn99.3Cu0.7. (ROL1)
	Pure Core	Available in Sn63; Bright, shiny joints, even if cleaning delayed 48 hrs. (ORM1)

Tin Lead - No Clean and Water Soluble(1) Processes

Solder Paste	**OM-5100**	Low residue, no-clean paste designed to maximize SMT line yields; Flux provides excellent repeatability & resistance to environmental conditions; Activation system enhances joint solderability, limits defects, & maintains long term reliability; Wide reflow profile window enables soldering of lead free components. (ROL0)
	OM-5300	Able to withstand long soak profile required to give better intermetallic formation with lead free components; Pin testable; flux system compatible with tin lead and lead free alloys. Zero Halogen. (ROL0)
	CL-78	Dispense paste only; Type 5 powder size; SnPb, SnAg, & SAC305; (ROL0)
	WS-809	Excellent temp and humidity resistance; Spread on all pad finishes; Very good coalescence; Shiny joints; Cleanable after 48 hour delay; IPC Class III Voiding; 1-6"/sec print speed; 16 mil circles; (ORH0.)
Bar Solder	**Vaculoy / J-Std (AKA Vac Bar)**	This is our standard / lowest cost Tin Lead solder. Manufactured using Alpha's proprietary VACULOY® viscosity and dross lowering treatment. This removes included oxides and delivers a solder with low rate of dross generation. Note: All Alpha bar uses this process, but it is highlighted here as it is a differentiator for our standard bar.
	Vaculoy / SMG	Our mid grade offering, has lower impurities than J-Std bar. Do not promote this to new customers. If new customers want a better bar than our standard, we should promote HiFlo.
	HiFlo	Alpha HiFlo is Alpha's purest version of Sn63 solder with the lowest level of impurities, far exceeding the J-STD requirements for solder impurities. It has better flow for lower defect rates, and it is our lowest drossing Sn63 bar solder. **Lead with this when looking for ways to attempt to differentiate to win business.**
Cored Wire[4]	**Telecore® HF-850**	See above in Lead-free
	Telecore® XL-825	See above in Lead-free
	Pure Core	See above in Lead-free.

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Fluxes - Alcohol Based / Water Soluble / VOC-Free		
Flux(2,3) - Alcohol Based	**EF-6000**	2.2% solids. Rosin-free; High Activity; Moderate reliability (IPC SIR TM 2.6.3.3); ; For Type 1, II & III Assemblies; Promote when customers are ultra-concerned about residues. (ORL0)
	EF-6103	3.6% solids. Includes some rosin for reliability. High activity; Excellent cosmetics and pin testing; Type I-III Assemblies, limited to ~ 120 C for top-side preheat. Good first choice for selective solder due to wide process window, especially at the lower heats for faster throughput. (ORL0)
	EF-6808 HF	4.0% Solids. Excellent hole fill on assemblies with high-density components; Low bridging, icicles and solder balls in both SnPb and Pb-free processes. Flux residues are uniform, transparent, tack free and highly pin testable. Can handle higher pre-heat than EF-6103 ~ 135 C. Halogen Free (ROL0)
	EF-8800 HF	6.0 % Solids. Designed for thick assemblies & challenging hole-fill applications exposed to previous reflow processes. Type III & IV Assemblies. Capable of Topside temps 135 C, combined with longer dwell times. Halogen Free (ROL0)
Water Soluble	**WS-373**	Good first choice to promote for a Water Soluble Flux. Highly Active, 24.0% Solids. Broad preheat range, low smoke, low odor. Does not foam in cleaning systems using soft or deionized water. Cleans well. Experience is that it wins more often that 856. Good counter to Kester WS-2331ZX. (ORH1)
	WS-856	Moderate to high activity, 15% solids; Neutral pH, and neutral pH post soldering residues. Ideal in cases where the boards may sit before cleaning. Low foaming in wash. Large install base. (ORH1)
	WS-857	Highly active; 18% solids; Non-neutral pH (ORH1)
	3355-11	This is our highest activity water soluble flux. 17% solids;. For applications with poor solderability challenges. (ORH1)
Flux(2,3) - Water Based/ VOC Free	**EF-2100**	Leading performing VOC Free No Clean. 4.0 % Solids. Exceptional wetting for excellent hole-fill; Thermally stable activators provide low solder bridging; low solder ball frequency; Suitable for selective soldering process; Excellent cosmetics and pin testing. Very low-level, non-tacky residues. Can **NOT** be cleaned in heated DI water. (ORL0)
	NR330	Promote this as a lead flux in this category IF customer requires cleaning in hot water. 4.0 % solids; Excellent wetting and hole fill; Residues removable with heated DI water. (ORL0)
	WS-375	19.5% solids. Good first choice for a VOC Free, Water-Soluble Flux. Very solid all around performance. (ORH1)
	3355VF	22.4% solids. High activity, VOC Free version of 3355-11. For applications with poor solderability challenges. (ORH1)
Rework	**EF-6100R**	Leading rework flux for customers that desire high electrical reliability. (Includes some rosin) Delivers excellent rework soldering performance with fast wetting with outstanding board cosmetics in a variety of rework applications using different Pb-Free and SnPb alloys. 4.3% Solids; Available in pens or bulk. (ORL0)
	NR-205	Low solids (2.15%), rosin-free, good reliability. Very safe, non-corrosive residues. NR-205 has better cosmetics and cleans easier than EF-6100R. Available in pens or bulk. (ORL0)
	870-25	High activity; High reliability with proper cleaning; Available in pens or bulk. (ORH1)
Paste Flux	**HF-1**	This is Alpha's leading recommendation for a no clean paste flux. (Replaces all others) Rosin-based, No-Clean paste flux designed for surface mount and other demanding electronic assembly applications. Broad Range of Rework Capabilities: Can be used for all touch up & hand soldering operations as well as BGA repair/reballing and QFN/LGA repair. It does not have to see the full thermal cycle from a typical reflow process. For lead-free and tin lead. Halogen Free (ROL0)
Exactalloy® Tape & Reel Preforms		
Preforms	**Tape & Reel**	Standard chip capacitor sizes available such as 0402; 0603, 0805, etc. to selectively increase volume on a SMT pad or through hole component; Available in SAC305, Sn63Pb37, SnBiAg0.4
	TrueHeight® Spacer	Sets a fixed standoff height under a component. Also eliminates corner solder bridging on BGAs.
	AccuFlux™ Preforms	Reduces voiding under larger surface area high power components. Voiding under 10% is achievable. Work with Alpha sales and CTS on this process solution.
		For all preforms, please reference Alpha Tape & Reel selector guide for more details.
Knowledge Products and Support Services		
Analytical Services	**POT-RITE® Alloy Integrity**	Levels of elements such as Cu, Pb, and Fe may change and pose a threat to process stability in wave solder machines; Program provides regular POT-RITE analyses and a report characterizing the process.
Additional Product Details at www.alphaassembly.com		
General Information	**1) All water soluble products are denoted in BLUE TEXT. The following products can aid in the water soluble process: ALPHA 2110 Saponifier; and ALPHA 2007 Defoamer** **2) All EF-series fluxes are SnPb and Lead-free capable** **3) Unless specifically noted; assume that under the proper process conditions; all fluxes will provide excellent hole fill; low bridging; and low solder balling. Please consult the specific Technical Bulletin for appropriate flux loading and process recommendations.** **4) Standard Wire Diameters = 0.15"; 0.20"; 0.25"; 0.32". Consult website for flux core %'s**	

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