MATERIAL SAFETY DATA SHEET

(FOR DOMESTIC [USA] CUSTOMERS)

SECTION 1 – CHEMICAL PRODUCT AND COMPANY IDENTIFICATION	
Trade Name (As Labeled):	SolderQuik BGA Preform
Manufacturer:	Winslow Automation, Inc.
Products Covered by this MSDS:	Solder Alloy Grades: (Tin/Lead ratios) 63/37, 10/90 (Tin/Silver/Copper ratios) 95.5/3.8/0.7
Address:	905 Montague Expressway Milpitas, CA 95035
Telephone:	(408) 262-9004
Telephone (Emergency):	(408) 313-5618
Chemical Name:	Not Applicable
Chemical Formula:	Not Applicable, Mixture
Product Description:	This product is designed to join a BGA package to corresponding solder lands on a printed wiring board (PWB). The preform consists of water soluble paper, a thin poly-ox film and a varied grid array of solder balls.
Date Prepared: (Revised)	June 24, 2004

SECTION 2 – HAZARDOUS AND NON-HAZARDOUS INGREDIENTS

Note: Product under normal conditions does not represent an inhalation, ingestion or contact health hazard. *The weight percent of Lead and Tin vary depending on the number of solder balls on the preform and the type of solder ball used i.e. high-temp or low-temp.

Hazardous Ingredients	C.A.S. Number	Weight %	OSHA PEL	ACGIH TLV STEL
Lead (Pb)	7439-92-1	*0-90	0.05 mg/m^3	0.15 mg/m^3
Tin (Sn)	7440-31-5	*10-96.5	2.0 mg/m^3	2.0 mg/m^3
Silver (Ag)	7440-22-4	0-4	0.01	N.E.
Copper (Cu)	7440-50-8	0-1	0.1 (fume)	N.E.
Non-Hazardous Ingredients				
POLY-OX Water Soluble Resin, Dissolvable Paper	N/A	Balance	N/A	N/A

SECTION 3 – PHYSICAL PROPERTIES

Boiling Point: (A 760 mm Hg)	N/A
Evaporation Rate: (Butyl Acetate = 1)	N/A
Solubility in Water:	Insoluble
Specific Gravity: (H_2O - 1)	N/A
Volatile Organic Compounds: (VOC)	N/A
Percent Volatile: (by Volume)	N/A
Vapor Density: (Air = 1)	N/A
Vapor Pressure: (mm Hg)	N/A
Appearance and Odor:	Paper wafer with solder balls in grid array format.
pH: (10 % Solution)	N/A

Melting Point:	N/A

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SECTION 4 – FIRE AND EXPLOSION HAZARD DATA	
Flash Point (T.O.C):	N/A
Flammable Limits (in air):	N/A
Extinguishing Media:	CO_2 and H_2O
Special Fire Fighting Procedures:	Fire fighters should wear self-contained breathing apparatus with a full facepiece operated in the positive pressure demand mode when fighting fires.
Special Fire and Explosion Hazards:	None Known
Auto-Ignition Temperature:	Not Applicable

SECTION 5 - REACTIVITY DATA	
Stability:	Stable
Conditions to Avoid:	Humidity and water will degrade the product.
Incompatibility	Strong acids, strong oxidizers.
Thermal Degradation and Combustion Byproducts:	Thermal degradation is not significant at temperature achieved during proper use, as directed by product use guide. Thermal degradation products may include, but are not limited to, carbon monoxide, carbon dioxide, oligomers of ethylene glycol and glycerol. At temperatures greater than 1000^0F (537^0C) oxides of lead and tin may be released. These combustion byproducts are toxic and should not be inhaled.

SECTION 6 - HEALTH HAZARDS / ROUTE(S) OF ENTRY

Note: Product under normal conditions does not represent an inhalation, ingestion or contact health hazard. However, soldering may release fumes and/or dust which may present health hazards if TLV is exceeded.

Primary Routes of Entry:	Skin, Inhalation	
Effects of Acute (severe short term) exposure:	Inhalation:	Thermal degradation and combustion byproducts may be toxic and should not be inhaled.
	Skin Contact:	This product is not expected to be a skin irritant.
	Eye Contact:	Contact with molten material may cause thermal burns.
	Ingestion:	In the unlikely event that exposure should occur, ingestion of excessive quantities of metals may cause anemia, sleep disturbances, weakness, irritation of the digestive tract, constipation, nausea, and abdominal pain.

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SECTION 6 - HEALTH HAZARDS / ROUTE(S) OF ENTRY cont.	
Effects of Chronic (prolonged) exposure:	Inorganic lead is a component of the solder in this product, and is listed by IARC as a suspect carcinogen. Lead is known to cause birth defects. Prolonged or repeated overexposure to lead may cause damage to the male and female reproductive system. Persons with pre-existing reproductive disorders may be more susceptible to the effects from lead exposure.
Medical Conditions Generally Aggravated by Exposure:	Solder balls contain lead. No significant emission of lead is expected during normal conditions of use. Overexposure to lead can result in serious health effects.
Carcinogenicity:	This product contains lead, which is known to the State of California to cause cancer, birth defects or other reproductive harm. This warning is provided in accordance with the provisions of California Health & Safety Code 252496.6.
Signs and Symptoms of Exposure:	Headache, nausea, dizziness and drowsiness.
SECTION 7 - EMERGENCY FIRST AID	
Eye Contact:	If eye irritation occurs, flush affected eye(s) immediately with clean water for 15 minutes. Seek medical attention.
Skin Contact:	First aid is not normally required. After handling product, it is a good work practice to wash your hands. If molten material contacts skin, cool area immediately with water. DO NOT attempt to remove material from the skin. Treat as a burn and seek medical attention.
Inhalation:	If respiratory symptoms or other symptoms of exposure develop, move victim to fresh air. If symptoms persist, seek medical attention.
Ingestion:	Not a normal route of exposure. However, if swallowed and symptoms develop, seek medical attention.
SECTION 8 – SPILL AND LEAK PROCEDURES	
Steps to be Taken if Material is Spilled or Released.	Wear appropriate personal protection when responding. Collect materials in a suitable container for proper disposal.
Waste Disposal Method:	Components of this product are considered a toxic hazardous waste in accordance with U.S. EPA regulations. Solder can be reclaimed. Classification according to all local and state hazardous waste regulations is required before disposal.
	EPA Hazardous Waste No: D008
	Hazard Class: 9, Miscellaneous

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SECTION 9 - SPECIAL PROTECTION INFORMATION	
Respiratory Protection:	Not normally needed. Seek professional advice prior to respirator selection and use.
Ventilation:	In accordance with good industrial hygiene practice, ensure adequate ventilation during use.
Protective Clothing/Equipment:	Use eyewear to prevent contact, as appropriate to the given operation. If there is a danger of molten material contacting the skin or eyes, use eye/face protection and heat-resistant gloves.
Hygienic Work Practices:	Do not eat, drink or smoke in the immediate work area. Wash hands before eating, drinking or smoking.
SECTION 10 – ADDITIONAL INFORMATION	
TSCA Status:	The ingredients of this product are on the TSCA inventory.
Department of Transportation:	Hazardous Waste Solid, n.o.s, NA3077, Class 9, Miscellaneous Hazardous Waste
SARA Status:	This Chemical is subject to the reporting requirements of Section 313, Title III.
California Proposition 65	This product contains levels of LEAD known to the State of California to cause cancer, birth defects or other reproductive harm.

This information is supplied in accordance with OSHA Hazard Communication Standard (29CFR1910.1200). Users are advised to ensure that this information is brought to the attention of the employees, agents, or contractors handling this product. Distributors of this product are advised to forward this document, or the information contained herein, to their purchasers. Winslow Automation makes no warranties as to its accuracy or completeness and disclaims any liability in connection with its use.

Users of Winslow Automation's products should make their own evaluation to determine the suitability of each such product for specific application and to establish safe handling and installation procedures.